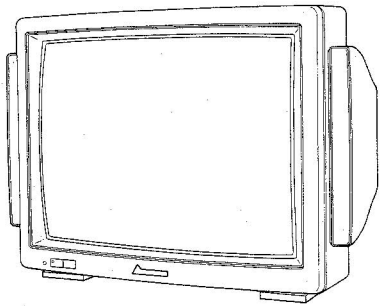
MITSUBISHI

Service Manual



MODEL

CT-37C2E

MITSUBISHI ELECTRIC CORPORATION

SPECIFICATION

Reception System	:	CCIR-B,G,I,L
Colour System	:	PAL/SECAM/3.58NTSC/4.43NTSC
Reception Freqeuncy	:	VHF : 44~68, 174~230MHz UHF : 470~862MHz
Mains Input	:	AC230V; 50Hz
Power Consumption	:	170W
Aerial Input	:	75Ω unbalanced
Intermediate Frequency	:	Video : 34.47/38.9MHz Sound : 32.4/32.9/33.16/33.4MHz Colour : 34.47/38.9MHz
Audio Output	:	30W+30W (Music Power)
Speaker	:	ø 100mm 2pcs
Chassis	:	EURO 9
Picture Tube	:	A48JWH10X 37" 110° Deflection
Cabinet Dimensions	:	959(W) x 727(H) x 593(D)mm
Weight (Approx.)	:	86.2kg

SAFETY PRECAUTIONS

NOTICE : Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING

1. An isolation transformer should be used between the television receiver and the AC supply point before any test/service is performed on a live chassis television receiver.
2. Operation of these receivers outside the cabinet or with the cover removed, involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not throughly familiar with precautions necessary when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter – proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
4. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short – circuit has occurred, replace those components that indicate evidence of overheating.

LEAKAGE CURRENT COLD CHECK

Before returning the receiver to the customer, it is recommended that the leakage current be measured according to the following methods.

With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an OHM-METER, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 4 meg ohm. Any resistance below this value indicates an abnormality which requires corrective action.

CABINET PARTS

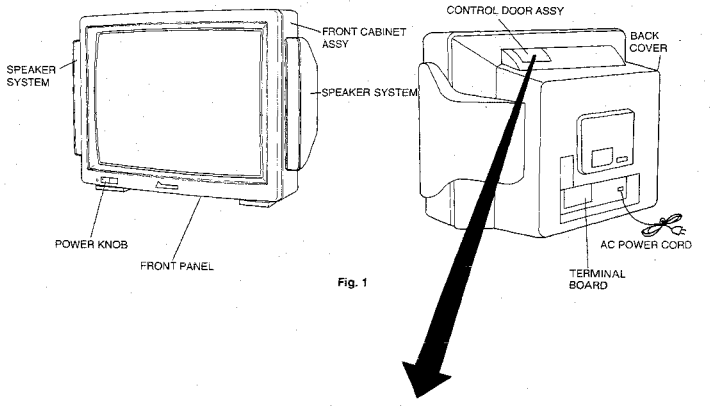


Fig. 1

CONTROL LOCATION

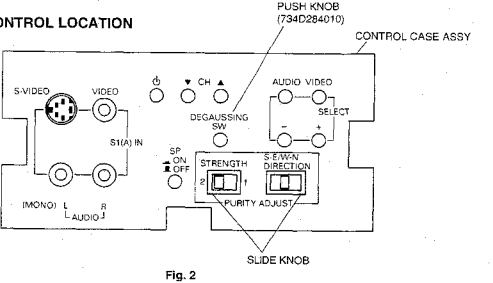
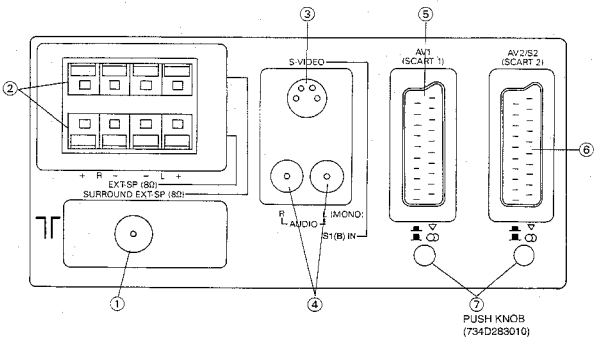


Fig. 2

CONNECTORS



① AERIAL SOCKET
② EXTERNAL LOUDSPEAKER CONNECTOR
③ S-VIDEO INPUT CONNECTOR
④ S-VIDEO AUDIO INPUTS
⑤ AV1 SCART SOCKET
⑥ AV2 SCART SOCKET
⑦ STEREO/MONO SWITCH

SCART SOCKET CONNECTIONS

MODE / PIN	AV1	AV2
1	AUDIO OUT R	
2	AUDIO IN R	
3	AUDIO OUT L	
4	AUDIO EARTH	
5	BLUE EARTH	EARTH
6	AUDIO IN L	
7	BLUE IN	NOT CONNECTED
8	FUNCTION SWITCH	
9	GREEN EARTH	EARTH
10	NOT CONNECTED	
11	GREEN IN	NOT CONNECTED

MODE / PIN	AV1	AV2
12	NOT CONNECTED	
13	RED EARTH	EARTH
14	EARTH	
15	RED IN	S CHROMA IN
16	RGB STATUS (BLANKING)	NOT CONNECTED
17	VIDEO OUT EARTH	
18	VIDEO IN EARTH	
19	VIDEO OUT	
20	VIDEO IN	
21	SOCKET EARTH	

Fig. 3

Using Extension cord jig

Using the Extension cord (Part No. 859C431O30) for servicing the PCB TEXT, the PCB YUV and the PCB DBF.

REPLACING THE PICTURE TUBE

1. Remove the left and right speakers.
2. Remove 24 screws retaining the rear cover. (Fig. 4-1)
3. Remove the main PC boards.
4. Remove the lead clamper and connector anode cap.
5. Remove 4 screws retaining the shield cover. (Fig. 4-2)

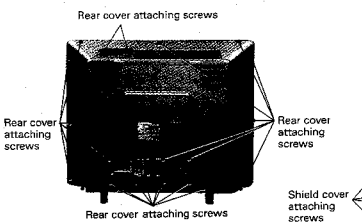


Fig. 4-1.

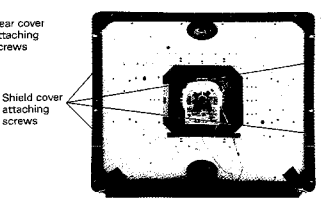
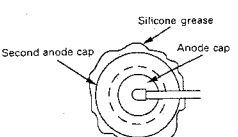


Fig. 4-2.



6. To protect the front surface of the CRT from damage, prepare a soft sheet, and lay the set on that sheet. Then, remove the four CRT lock nuts, using the T driver (JIG No. 859C358020). (Fig. 4-3)
7. Mount the set on the base so that the centre of picture tube is aligned with the centre of the base. Then, lower the cabinet slowly. (Fig. 4-4)
8. Replace the CRT with new one. For installation of the picture tube, reverse the above procedure. (Fig. 4-5)

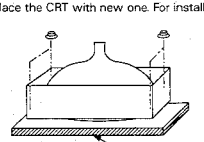


Fig. 4-3.

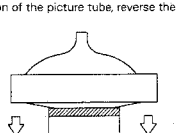


Fig. 4-4.

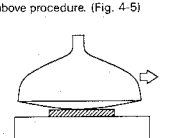


Fig. 4-5.

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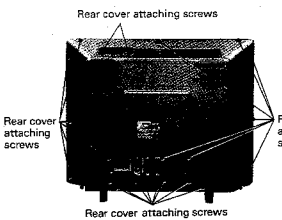


Fig. 4-1.

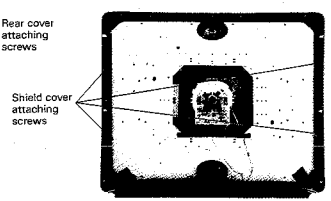
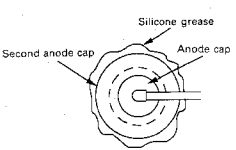


Fig. 4-2.



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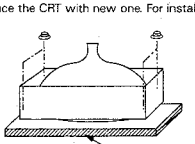


Fig. 4-3.

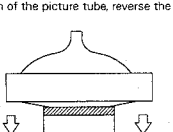


Fig. 4-4.

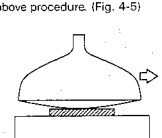


Fig. 4-5.

ITC adjustment

Purity and Convergence

Before adjusting the INTEGRATED TUBE COMPONENT, warm up the Receiver for more than an hour with a monochrome signal applied, to allow normal beam current flow.
Degauss not only the front and rear of the CRT but also the external magnetic shield, CRT holder, etc. (Insufficient degaussing causes magnetization, giving an unfavourable effect on colour purity adjustment.)

Purity and Convergence adjustments should be performed in the following sequence when replacing either the Picture Tube, Deflection Yoke, or Purity & Convergence Magnetic Assembly.

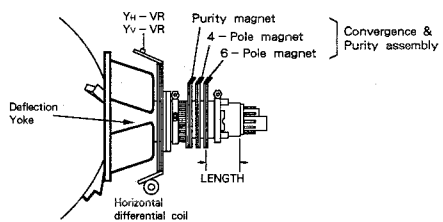
Note 1: The picture tube provided as a service spare part replacement is supplied in the form of assembly with Picture Tube, Deflection Yoke and Purity and Convergence magnetic assembly attached.
As a rule, Purity Convergence adjustment have already been preset at the factory, so that the final adjustment procedure only is required.

Note 2: When replacing either the Deflection Yoke or Purity and Convergence Magnetic Assembly, follow procedures (1) through (5).

Note 3: If purity adjustment only is required, with no components replaced, follow "FINAL ADJUSTMENT".

Procedure

(1) Remove the deflection yoke and rubber wedges from the picture tube cone, take care not to strike or scratch the cone surface.
(2) Clean any remaining cement off the deflection yoke and the surface of the picture tube cone.
(3) Put the deflection yoke on the neck of the picture tube, fully forward against cone.
(4) Put the Purity & Convergence assembly on the neck of the picture tube so that the distance between the 6-pole magnet and the base of the tube is 1.81±0.04 inches(46±1.0mm) as shown in Fig. 5-1, and tighten screw by hand.
(5) Demagnetize the front and sides of the receiver with a degaussing coil.



LENGTH
46±1.0 mm 1.81±0.04 inches

Fig. 5-1

Preliminary Adjustment

1. Purity

(1) Tune receiver to a monochrome signal.
(2) Short-circuit the base and emitter of B-OUT transistor to produce yellow raster.
(3) With the deflection yoke positioned fully forward, adjust the purity magnet so that the yellow bar is at the centre of the screen with normal vertical centreing.
(4) Slide the deflection yoke slowly backwards to produce a uniform yellow raster.
(5) Remove the shorting link on B-OUT transistor.
(6) Short-circuit the base and emitter of corresponding two transistors as indicated in Table 1 to produce green, red and blue rasters and to verify their purity, and fasten the DY screw on the deflection yoke temporarily.
(7) Remove the shorting leads from respective transistors.

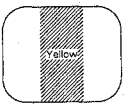


Fig. 5-2

Table 1
Transistors to be Shorted Base to Emitter to Produce Primary Colour.

Transistor / Raster	R – OUT	G – OUT	B – OUT
Red	Open	Short	Short
Green	Short	Open	Short
Blue	Short	Short	Open

2. Static Convergence Adjustment

(1) Tune the receiver to a crosshatch signal.
(2) Set the BRIGHTNESS and CONTRAST controls to centre position.
(3) Adjust the degree of angle between the tabs of the 4-pole magnet and the angular position to converge the "B" and "R" beams of the green at the centre on the screen.
[Refer to Fig. 5-3(b)]
(4) Adjust the degree of angle between the tabs of the 6-pole magnet and the angular position to converge the "B" and "R" beams to the "G" beam at the centre of the screen.
[Refer to Fig. 5-3(c)]
(5) If necessary, repeat the above steps.

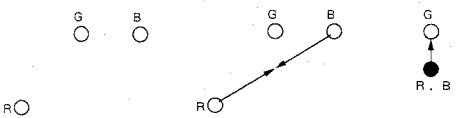


Fig. 5-3(a) Before Adjustment

Fig. 5-3(b) Adjustment by 4-pole Magnet

Fig. 5-3(c) Adjustment by 6-pole Magnet

Note:

* The 4-pole magnet moves "B" and "R" beams in equal distances but opposite directions.
* The 6-pole magnet moves "B" and "R" beams in the same direction and distance.
* The "G" beam is not movable by the 4-pole and 6-pole magnets.

3. Focus Adjustment

(1) Supply a grey scale signal with window.
(2) Observing around the vertical line, adjust FOCUS control for best overall focus.
Refer to Focus of electrical adjustment.

Final Adjustment

1. Purity

(1) Tune receiver to a monochrome signal.
(2) Short-circuit the base and emitter of B-OUT transistor to produce yellow raster.
(3) Loosen the Deflection Yoke screw and move it forward. Make certain that the yellow bar is at the horizontal centre. If necessary, adjust purity magnets to centre it.
(4) Slide the Yoke backwards to produce a uniform yellow raster.
(5) Short-circuit the base and emitter of corresponding two transistors as indicated in Table 1 to produce green, red and blue rasters and to verify their purity, and fasten the DY screw on the deflection yoke temporarily.
(6) If necessary, repeat above steps.
(7) Tighten the Yoke in position.
(8) Remove the shorting leads from respective transistors.
(9) Fix the yoke in position using the DY screws.

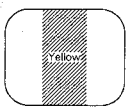


Fig. 5-4

Note: When adjusting the Deflection Yoke position, never touch any portion of the yoke other than the screw. Do not touch the purity ring magnete unless absolutely necessary, in which case carry out the preliminary purity adjustment procedures again.

Screen corner landing compensation

※ The steps described below are for correcting outward colour beam divergence at screen corners. Take reversal placement of the magnetic pieces for correcting inward divergence.
(1) Degauss the unit with its own degauss system.
※ Do not use any degaussing coil other than the built-in degaussing coil since the external coil may fail degaussing and worse, will magnetize the TV set.
(2) Receive the red, green or blue signal.
(3) Make sure that the colour other than the received colour does not appear at a corner of the screen. If appears, attach magnetic pieces (up to 3 pieces at a position) on the funnel of the CRT so that the colour disappears.(Part No. of the magnet : 461D033O20 **Not stocked parts**)

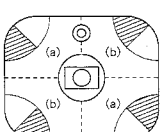


Fig.5-5

When an undesirable colour appears at the area (a) in the figure above, attach the magnetic pieces on the opposite surface of the funnel with the magnetic pieces on the opposite surface facing outside. When an undesirable colour appears at the area (b) in the figure above, attach the magnetic pieces on the opposite surface of the funnel with the surface facing inside.

(CAUTION)

The magnetic piece will distort the raster and disturb the convergence system. Do not place magnetic piece closer than 50mm (2 inches) from the deflection yoke.
If an undesirable colour appears at the area shown ▨, move the magnetic piece counter-clockwise until the colour disappears.
If an undesirable colour appears at the area shown ▭, move the magnetic piece clockwise until the colour disappears.
After correction, degauss the set and then check the screen corners for discolouration. If exists, fine adjust the magnetic pieces for that corner.
Repeat degaussing and checking.

2. Focus Adjustment	(1) Supply a grey scale signal with window. (2) Observing around the vertical line, adjust FOCUS control for best overall focus. Refer to Focus (No.14) of electrical adjustment.
3. Static Convergence Adjustment	(1) Tune the receiver to a crosshatch signal. (2) Set the BRIGHTNESS and CONTRAST controls in centre positions. (3) Adjust the degree of angle between the tabs of the 4-pole magnet and the angular position green at the centre of the screen to converge the "B" and "R" beams on the screen. [Refer to Fig. 5-3(b)] (4) Adjust the degree of angle between the tabs of the 6-pole magnet and the angular position to congerge the "B" and "R" beams to the "G" beam at the centre of the screen. [Refer to Fig. 5-3(c)] (5) If necessary, repeat above steps. **Note 1:** * The 4-pole magnet moves "B" and "R" beams in equal distances but opposite directions. * The 6-pole magnet moves "B" and "R" beams in the same direction and distance. * The "G" beam is not movable by the 4-pole and 6-pole magnets. **Note 2:** Never perform focus adjustment after convergence adjustments. If focus is adjusted after the convergence adjustment, re-check the convergence.

4. Dynamic convergence Y_H adjustment (Deviation of the vertical axis in the horizontal direction.)

Input a crosshatch signal.

Observing top and bottom point on the screen, adjust the VR (Y_H), at the upper part of the deflection yoke, for best convergence.

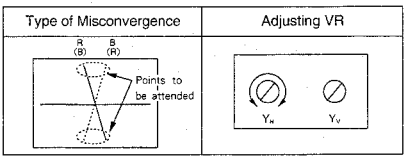


Fig. 5-6(a)

Y_V adjustment (Deviation of the horizontal axis in the vertical direction.)

Adjust the VR(Y_V), in upper part of the deflection yoke, to converge horizontal lines at the top and bottom of the screen.

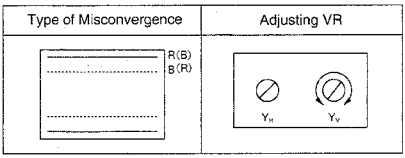


Fig. 5-6(b)

X_V adjustment (Deviation of horizontal axis in the vertical direction.)

Deviation should be corrected by adjusting the horizontal differential coil(core position).

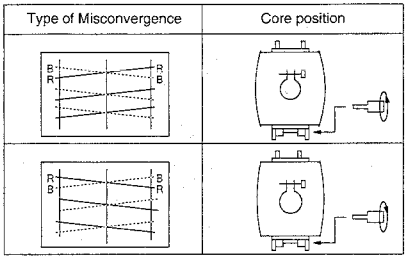
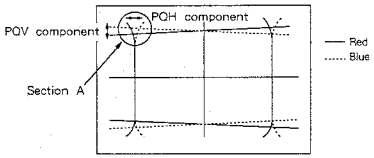
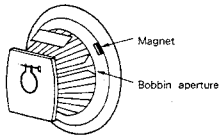


Fig. 5-6(c)

If convergence is poor at corners, place the magnet at the aperture of the deflection yoke bobbin as shown in Fig. 5-7 so that PQH (Pin cushion quality H) and PQV(Pin cushion quality V) components shall be minimized.
To correct the A section of the screen in Fig. 5-7, stick a magnet to the position shown in Fig. 5-7 below.
(Part No. of the magnet : 461D017O10 **Not stocked parts**)



(Misconversion pattern)



Magnet mounting position
(Rear view of deflection yoke).

Fig. 5-7

5. Wedge position

After the position of the wedges has been determined, gently turn up the end of the wedge and strip the tape from the rear of the end to expose the adhesive material, then adhere to the picture tube cone. Apply silicone gum (Parts No. 859D106O20) between wedges and the picture tube cone. (Fig. 5-9)

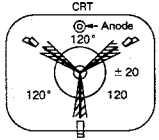


Fig. 5-8

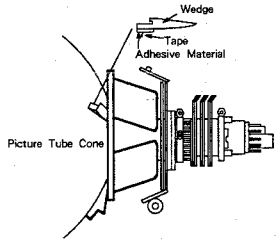


Fig. 5-9

Electrical Adjustment

Perform only the alignments required.
If proper equipment is not available, do not attempt an alignment.

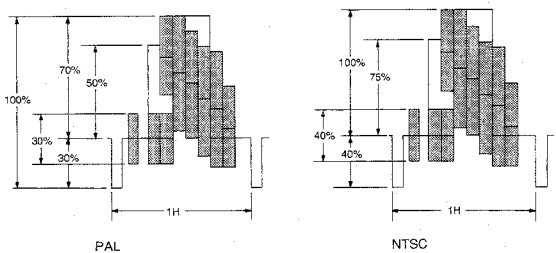
■ Measuring equipment and Jigs

- Oscilloscope (Unless otherwise specified in particular, use 10:1 probes.)
- Signal generator
- Frequency counter
- Direct current voltmeter.
- Electrical tools

■ Test Signal

1) Monoscope signal
   When you have no monoscope signal source for adjustment, connect the unit to a VCR and play an alignment tape (Monoscope).

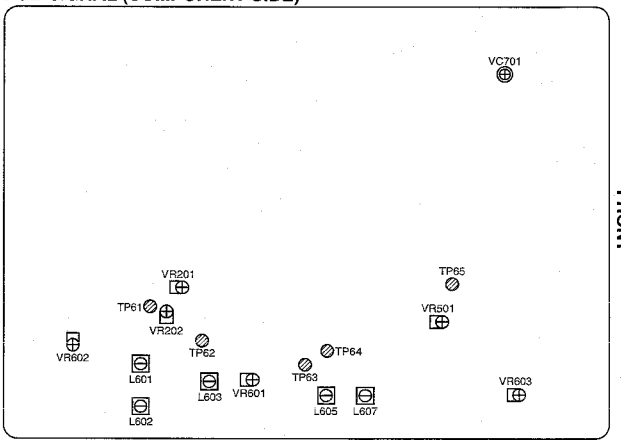
2) Colour bar signal
   In this manual, unless otherwise specified in particular, use colour bar signal in specifications below.



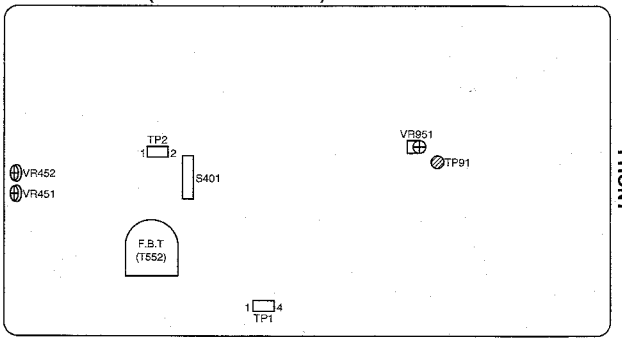
Split-Field Colour Bars (with 100% window)

LOCATION OF TESTPOINTS AND ADJUSTMENTS

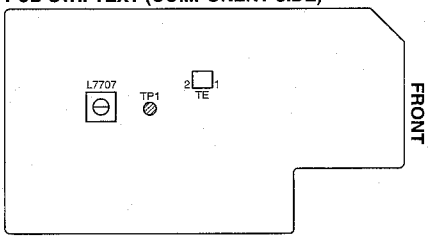
PCB-SIGNAL (COMPONENT SIDE)



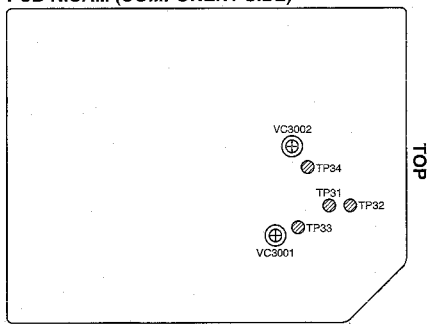
PCB-MBC-DEFL (COMPONENT SIDE)



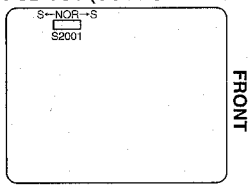
PCB-SWIFTEXT (COMPONENT SIDE)



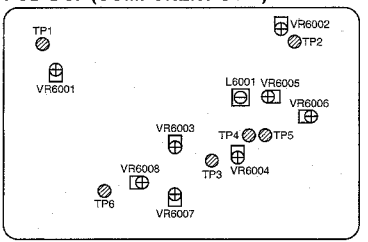
PCB-NICAM (COMPONENT SIDE)



PCB-YUV (COMPONENT SIDE)

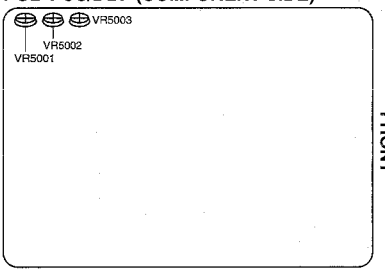


PCB-DCF (COMPONENT SIDE)



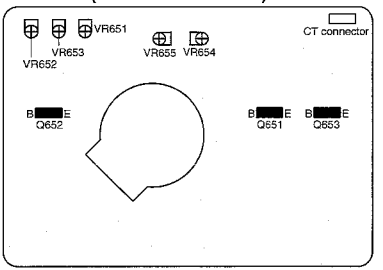
TOP

PCB-PCC/DBF (COMPONENT SIDE) TOP

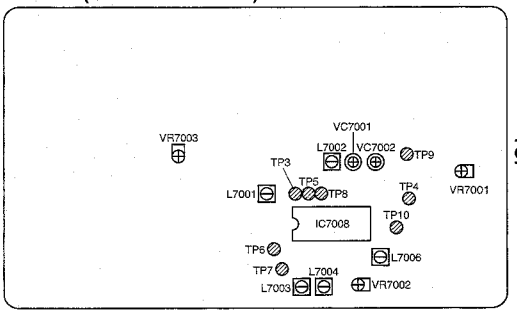


FRONT

PCB-CRT (COMPONENT SIDE) TOP



PCB-PIP (COMPONENT SIDE)

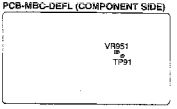


[Power Circuit] 1. B4 Voltage	**Adjustment purpose**	Setting supply voltage for each circuits.
	Symptom when incorrectly adjusted	Too bright or too dark picture. Too compressed or too expanded.

Measuring instrument	AC Voltmeter
Test point	TP 91
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Observe the voltage at TP91.
3. Adjust VR951 so that the B4 voltage is 130V.

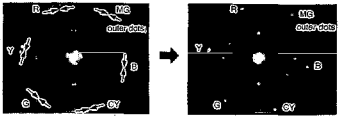
PCB-MBC-DEFL (COMPONENT SIDE)



[Chroma Circuit] 2. PAL Vector	**Adjustment purpose**	Setting each colour to the best result when receiving PAL signal.
	Symptom when incorrectly adjusted	Incorrect colour when receive PAL signal.

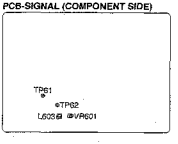
Measuring instrument	Oscilloscope
Test point	CH-1:TP61 CH-2:TP62
EXT trigger	---
Measurement range	DIV 10mV TIM X-Y mode
Input signal	Video signal (G card)
Input terminal	VIDEO IN terminal

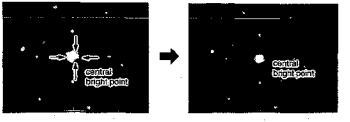
1. Supply a video signal (G card).
2. Observe the waveform at TP61 and TP62. (CH-1 to TP61)
3. Set the oscilloscope to X-Y mode.
4. Adjust L603 so that outer double dots draw together.



5. Adjust VR601 so that the four pair of dots come nearer to the central bright point.

PCB-SIGNAL (COMPONENT SIDE)





3. SECAM Bell Filter

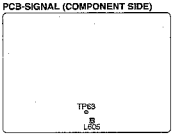
Adjustment purpose Setting carrier freguency for SECAM signal.

Symptom when incorrectly adjusted The colour is erratic.

Measuring instrument	Oscilloscope
Test point	TP63
EXT trigger	---
Measurement range	DIV 5mV TIM 20µs
Input signal	Video signal (SECAM Colour bar)
Input terminal	VIDEO IN terminal

1. Supply a video signal (SECAM Colour bar).
2. Observe the waveform at TP63.
3. Adjust L605 so that the amplitude of the magenta of the adjoining horizontal synchronization shall be nearly egual.

PCB-SIGNAL (COMPONENT SIDE)



4. SECAM Identification

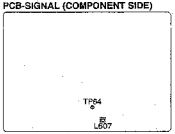
Adjustment purpose Setting phase of chrominance subcarrier for SECAM signal.

Symptom when incorrectly adjusted Coloured monochrome when receive SECAM signal.

Measuring instrument	Oscilloscope
Test point	TP64
EXT trigger	---
Measurement range	DIV 0.1V TIM 10µs
Input signal	Video signal (SECAM Colour bar)
Input terminal	VIDEO IN terminal

* This adjustment must follow item 3 (SECAM Bell Filter).
1. Supply a video signal (SECAM Colour bar).
2. Observe the waveform at TP64.
3. Adjust L607 so that the DC level is maximum.

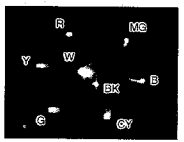
PCB-SIGNAL (COMPONENT SIDE)

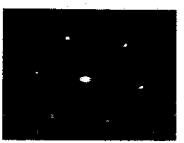


5. SECAM Demodulator	**Adjustment purpose**	Setting each colour to the best result when receiving SECAM signal.
	Symptom when incorrectly adjusted	Incorrect colour when receive SECAM signal.

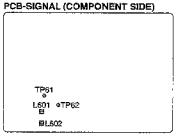
Measuring instrument	Oscilloscope
Test point	CH-1:TP61 CH-2:TP62
EXT trigger	---
Measurement range	DIV 10mV TIM X-Y mode
Input signal	Video signal (SECAM Colour bar)
Input terminal	VIDEO IN terminal

* This adjustment must follow item 4 (SECAM Identification).
1. Supply a video signal (SECAM Colour bar).
2. Observe the waveform at TP61 and TP62.(CH-1 to TP61)
3. Set the osilloscope to X-Y mode.
4. Adjust L601 and L602 so that the middle bright point corresponding to the white of vector and the bright point corresponding to the black shall be merged.





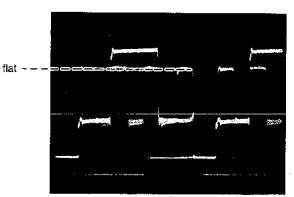
PCB-SIGNAL (COMPONENT SIDE)



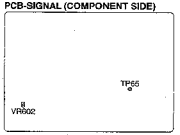
6. Colour Output	**Adjustment purpose**	Setting colour level of video signal.
	Symptom when incorrectly adjusted	Too much or too little colour level.

Measuring instrument	Oscilloscope
Test point	TP65
EXT trigger	---
Measurement range	DIV 10mV TIM 10µs
Input signal	Video signal (SECAM Colour bar)
Input terminal	VIDEO IN terminal

* This adjustment must follow item 2 (PAL Vector), 13 (Cut off, white) and 15(Sub Cont).
1. Supply a video signal (SECAM Colour bar).
2. Press OPTIMUM button on the remote hand unit.
3. Observe the waveform at TP65.
4. Adjust VR602 so that the tops of the waveforms shall be flat.



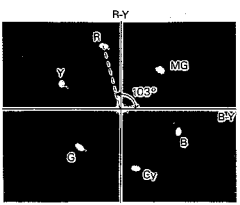
PCB-SIGNAL (COMPONENT SIDE)



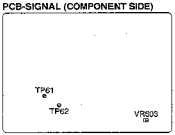
7. Sub Tint	**Adjustment purpose**	Setting each colour to the best result when receive NTSC signal.
	Symptom when incorrectly adjusted	Reddish or greenish picture when receive NTSC signal.

Measuring instrument	Oscilloscope
Test point	CH-1:TP61 CH-2:TP62
EXT trigger	---
Measurement range	DIV 10mV TIM X-Y mode
Input signal	Video signal (NTSC Colour bar)
Input terminal	VIDEO IN terminal

1. Supply a video signal (NTSC Colour bar) to AV1.
2. Press OPTIMUM button on the remote hand unit.
3. Observe the waveform at TP61 and TP62 (CH-1 to TP61).
4. Set the oscilloscope to X-Y mode.
5. Adjust VR603 so that the red dot is 103°.



PCB-SIGNAL (COMPONENT SIDE)

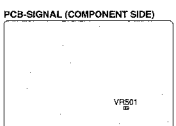


[Deflection Circuit] 8. Horizontal Centre	**Adjustment purpose**	Horizontal position of picture.
	Symptom when incorrectly adjusted	Picture too shifted to the left, or the right.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Adjust VR501 so that readings of left and right markers are the same.

PCB-SIGNAL (COMPONENT SIDE)

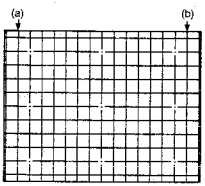


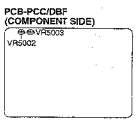
9. PCC	**Adjustment purpose**	Horizontal linearity of picture.
	Symptom when incorrectly adjusted	Horizontal distortion of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (PAL Cross hatch)
Input terminal	VIDEO IN terminal

1. Supply a video signal (PAL Cross hatch).
2. Press OPTIMUM button on the remote hand unit.
3. Observing the second line (a), (b) from both ends on the screen. Adjust VR5003 and VR5002 for optimum EAST-WEST PCC.
4. Supply a video signal (NTSC Cross hatch).
5. Observing the second line (a), (b) from both ends on the screen. Adjust VR5002 for optimum EAST-WEST PCC phase.

Note: When the cross hatch signal change to the condition at PAL, confirm the signal is as good as the cross hatch signal at NTSC.

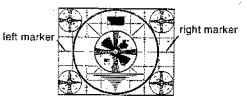


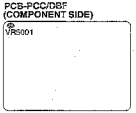


10. Horizontal Width	**Adjustment purpose**	Horizontal width of picture.
	Symptom when incorrectly adjusted	Too compressed or too expanded horizontal width of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Press OPTIMUM button on the remote hand unit.
3. Adjust VR5001 so that the sum of left and right markers is 3.8–5.8 (eguivalent to 6–9% overscan).

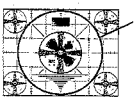




11. Vertical Height, Vertical Linearity	**Adjustment purpose**	Vertical height and linearity of picture.
	Symptom when incorrectly adjusted	Too compressed or too expanded vertical height of picture. Vertical linearity of picture.

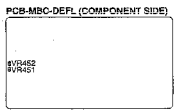
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Press OPTIMUM button on the remote hand unit.
3. Adjust VR452 for approx. 90% vertical size of raster.
4. Adjust VR451 for symmetry of vertical linearity.
5. Adjust VR452 so that the largerst circle is a complete round.



monoscope

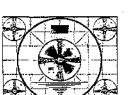
PCB-MBC-DEFL (COMPONENT SIDE)



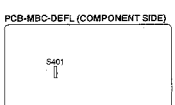
12. Vertical Centre Position	**Adjustment purpose**	Vertical position of picture.
	Symptom when incorrectly adjusted	Picture too shifted to the up, or the low.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Set S401 for optimum raster position.


monoscope

PCB-MBC-DEFL (COMPONENT SIDE)



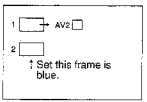
[CRT Circuit]
13. Cut Off, White

Adjustment purpose Rate of electron beam shot from each electron gun of R, G and B.

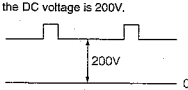
Symptom when incorrectly adjusted Coloured monochrome, too dark or too bright picture.

Measuring instrument	Oscilloscope
Test point	Collector of Q651
EXT trigger	---
Measurement range	DIV 5V TIM 20μs
Input signal	---
Input terminal	---

1. Supply no signal to AV1.
2. Set AV1 mode.
3. Inhibit the blue background.
   ① Press "MENU" button on the remote hand unit three times.
   ② Push the button: 2 of the remote hand unit so that the frame which refer to figure is white.
   (Whenever push the button:2, the frame changes to white and blue alternately.)

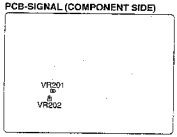


   ③ Press "MENU" button.
4. Tilt S2001 to left or right.
5. Set VR651, VR652 and VR653 to fully counterclockwise position as seen from solder side.
6. Set VR654 and VR655 to the mechanical centre position.
7. Set VR202 to fully counterclockwise position as seen from solder side.
8. Set VR201 to the mechanical centre position.
9. Set SCREEN volume (on F.B.T.) to fully counterclockwise position.
10. Observe the waveform at the collector of Q651.(Use CT connector pin② for ground)
11. Adjust VR651 so that the DC voltage is 200V.

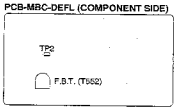


12. Observe the waveform at the collector of Q652.(Use CT connector pin② for ground)
13. Adjust VR652 so that the DC voltage is 200V.
14. Observe the waveform at the collector of Q653.(Use CT connector pin② for ground)
15. Adjust VR653 so that the DC voltage is 200V.
16. Short-circuit TP2 connector pin① and pin②.
17. Adjust SCREEN volume (on F.B.T.) to the point where one red, green or blue line becomes just visible.
18. Adjust two of VR651, VR652 and VR653 so that the horizontal line becomes white, e.g. if the original colour line was blue, adjust VR651 and VR653 to achieve a white line.
19. Return S2001 to the centre position.
20. Adjust VR2002 so that the horizontal line becomes bright.
21. Open the short circuit of TP2 connector pin① and pin②.
22. Supply a video signal (white raster).
23. Adjust VR654 and VR655 so that the entire screen is in pure white.
    If necessary, repeat step 1 to 23 above.

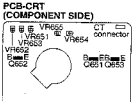
PCB-SIGNAL (COMPONENT SIDE)



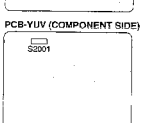
PCB-MRC-DEFL (COMPONENT SIDE)



PCB-CRT (COMPONENT SIDE)



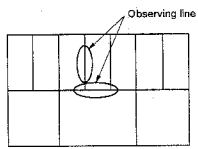
PCB-YUV (COMPONENT SIDE)

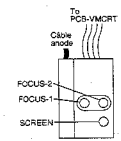


14. Focus	**Adjustment purpose** Sharpness of picture. **Symptom when incorrectly adjusted** Poor sharpness of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Grey Scale with Window)
Input terminal	VIDEO IN terminal

1. Supply a video signal (grey scale with window).
2. Observing around the vertical line.
3. Adjust FOCUS-2 volume (on F.B.T.) for best focus.
4. Observing around the horizontal line.
5. Adjust FOCUS-1 volume (on F.B.T) for best focus.
6. Repeat step 2 to 5 three times or more.

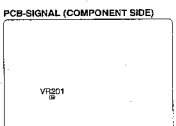


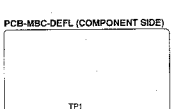


[Video Circuit] 15. Sub Cont	**Adjustment purpose** The best value of beam current. **Symptom when incorrectly adjusted** Too bright or too dark picture.

Measuring instrument	DC milliammeter
Test point	+lead:TP1 connector pin① −lead:TP1 connector pin④
EXT trigger	---
Measurement range	---
Input signal	Video signal (Colour bar)
Input terminal	VIDEO IN terminal

* This adjustment must follow item 13 (Cut Off, White).
1. Supply a video signal (Colour bar).
2. Set COLOUR control to minimum.
3. Observe the waveform at TP1 connector pin① and pin④. (Plus lead to TP connector pin①)
4. Adjust VR201 so that the beam current is 1500±20μA.





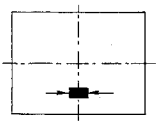
[Micro Computer Circuit]
16. Display Position

Adjustment purpose Charactor position on screen.

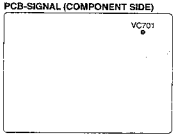
Symptom when incorrectly adjusted Charactors too shifted to the left, or the right.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Centre cross)
Input terminal	VIDEO IN terminal

* This adjustment must follow item 8 (Horizontal Centre).
1. Supply a video signal (Centre cross).
2. Press OPTIMUM button on the remote hand unit.
3 Adjust VC701 so that the centre of the level bar is on the vertical line of the centre cross signal.



PCB-SIGNAL (COMPONENT SIDE)



[Teletext Circuit]
17. Teletext Free Run Frequency

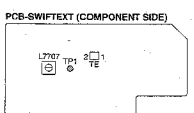
Adjustment purpose The best detect condition of text signal from video signal.

Symptom when incorrectly adjusted Distorted text display.

Measuring instrument	Frequency Counter
Test point	TP1
EXT trigger	---
Measurement range	---
Input signal	---
Input terminal	---

* Preheat the set for five minutes or more.
1. Disconnect a antenna cable from RF IN terminal to display a snow noise on the screen.
2. Disconnect TE connector from PCB-SWIFTEXT.
3. Observe the frequency at TP1.
4. Adjust L7707 so that the frequency is 13.4±0.1MHz.

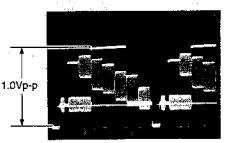
PCB-SWIFTEXT (COMPONENT SIDE)



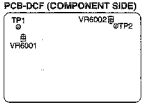
[DCF Circuit] 18. CCD Insert Gain	**Adjustment purpose**	Setting input and output signal level of CCD circuit.
	Symptom when incorrectly adjusted	Too much or too little colour level.

Measuring instrument	Oscilloscope
Test point	TP1
EXT trigger	---
Measurement range	DIV 20mV TIM 10μs
Input signal	Video signal (Colour bar)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Colour bar).
2. Observe the waveform at TP1.
3. Adjust VR6001 so that the amplitude of the video signal is 1.0Vp-p.
4. Observe the waveform at TP2.
5. Adjust VR6002 so that the amplitude of the video signal is 1.0Vp-p.



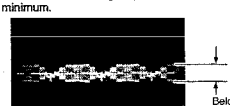
PCB-DCF (COMPONENT SIDE)



19. Vertical Correlation	**Adjustment purpose**	Reduced vertical dot disturbance.
	Symptom when incorrectly adjusted	Vertical dot disturbance is noticeable.

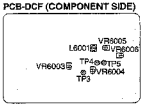
Measuring instrument	Oscilloscope
Test point	CH-1:TP3 CH-2:TP4
EXT trigger	---
Measurement range	DIV 10mV TIM 20μs
Input signal	Video signal (Colour bar)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Colour bar).
2. Turn VR6003 fully counterclockwise as seen from component side.
3. Observe the waveform at TP3 and TP4 (CH-1 to TP3).
4. Set the oscilloscope's CH-2 to INVERT mode.
5. Set the oscilloscope to ADD mode.
6. Alternate adjustments in the following sequence:VR6003, VR6004 so that the chroma level is minimum.



7. Observe the waveform at TP3 and TP5 (CH-1 to TP3).
8. Set the oscilloscope's CH-2 to INVERT mode.
9. Set the oscilloscope to ADD mode.
10. Alternate adjustments in the following sequence: VR6005, VR6006 and L6001 so that the chroma level is minimum.

PCB-DCF (COMPONENT SIDE)



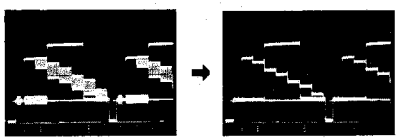
20. Y/C Separation

Adjustment purpose Separating video signal to Y signal and C-signal.

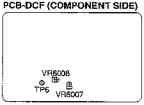
Symptom when incorrectly adjusted Dot disturbance is noticeable.

Measuring instrument	Oscilloscope
Test point	TP6
EXT trigger	---
Measurement range	DIV 20mV TIM 10µs
Input signal	Video signal (Colour bar)
Input terminal	VIDEO IN terminal

1. Supply a video signal (colour bar).
2. Observe the waveform at TP6.
3. Alternate adjustments in the following sequence : VR6007, VR6008 so that the chroma level is minimum.



PCB-DCF (COMPONENT SIDE)



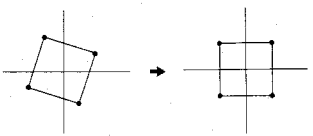
[NICAM Circuit] 21. Carrier VCXO

Adjustment purpose Setting phase of NICAM signal.

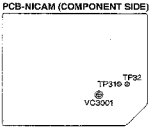
Symptom when incorrectly adjusted Deteriorating detection sensitivity of NICAM signal.

Measuring instrument	Oscilloscope
Test point	CH-1:TP31 CH-2:TP32
EXT trigger	---
Measurement range	DIV 10mV TIM X-Y mode
Input signal	RF signal (NICAM stereo or dual sound)
Input terminal	RF IN terminal

1. Supply an RF signal (NICAM stereo or dual sound).
2. Observe the waveform at TP31 and TP32 (CH-1 to TP31).
3. Set the oscilloscope to X-Y mode.
4. Adjust VC3001 so that a square made by lining up four luminous point run parallel with a scale line of oscilloscope.



PCB-NICAM (COMPONENT SIDE)



22. Clock VCXO

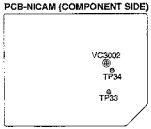
Adjustment purpose Setting input clock pulse to NICAM circuit.

Symptom when incorrectly adjusted Disappear the sound.

Measuring instrument	DC Voltmeter
Test point	+lead : TP33 −lead : TP34
EXT trigger	---
Measurement range	---
Input signal	RF signal (NICAM stereo or dual sound)
Input terminal	RF IN terminal

1. Supply an RF signal (NICAM stereo or dual sound).
2. Observe the voltage at TP33 and TP34 (Plus lead to TP33).
3. Adjust VC3002 so that voltage difference is 0±30mV.

PCB-NICAM (COMPONENT SIDE)



[PIP Circuit]
23. 5MHz OSC

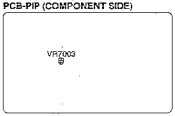
Adjustment purpose Setting input clock pulse to PIP circuit.

Symptom when incorrectly adjusted Too compressed or too expanded in sub picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (PAL G card)
Input terminal	VIDEO IN terminal

1. Supply a video signal (PAL G card).
2. Set the receiver to PIP mode.
3. Display G card signal on the main and sub picture, respectively.
4. Adjust VR7003 so that display widths of the sub picture are symmetrical with respect to the screen centre.

PCB-PIP (COMPONENT SIDE)

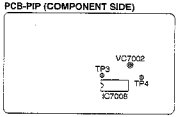


24. PAL Free Run Frequency	**Adjustment purpose**	Setting PAL free run frequency of sub picture to 4.43 MHz (chrominance subcarrier).
	Symptom when incorrectly adjusted	Coloured monochrome in sub picture when receive PAL signal.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	RF signal (PAL G card)
Input terminal	RF IN terminal

1. Supply an RF signal (PAL G card).
2. Supply a video signal (PAL colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL G card signal on the main picture.
5. Display PAL colour bar signal through AV1 on the sub picture.
6. Connect TP3 and Vcc (IC7008 pin⑱) through a resistor (220Ω).
7. Connect TP4 to ground.
8. Adjust VC7002 for almost colour synchronization.
9. Remove a resistor (220Ω) and ground used in step 6 and 7.

PCB-PIP (COMPONENT SIDE)

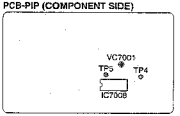


25. NTSC Free Run Frequency	**Adjustment purpose**	Setting NTSC free run frequency of sub picture to 3.58MHz (chrominance subcarrier).
	Symptom when incorrectly adjusted	Coloured monochrome in sub picture when receive NTSC signal.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	RF signal (PAL G card)
Input terminal	RF IN terminal

1. Supply an RF signal (PAL G card).
2. Supply a video signal (NTSC colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL G card signal on the main picture.
5. Display NTSC colour bar signal through AV1 on the sub picture.
6. Connect TP5 and Vcc (IC7008 pin⑨) through a resistor (220Ω).
7. Connect TP4 to ground.
8. Adjust VC7001 for almost colour synchronization.
9. Remove a resistor (220Ω) and ground used in step 6 and 7.

PCB-PIP (COMPONENT SIDE)



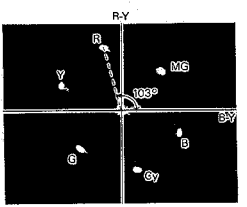
26. NTSC Sub Tint

Adjustment purpose Setting each colour to the best result for sub picture which receive NTSC signal.

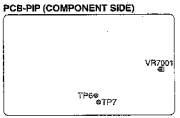
Symptom when incorrectly adjusted Reddish or greenish picture in sub picture when receive NTSC signal.

Measuring instrument	Oscilloscope
Test point	CH-1 : TP7 CH-2 : TP6
EXT trigger	---
Measurement range	DIV 20mV TIM X-Y mode
Input signal	RF signal (PAL G card)
Input terminal	RF IN terminal

* This adjustment must follow item 25 (NTSC Free Run Frequency).
1. Supply an RF signal (PAL G card).
2. Supply a video signal (NTSC colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL G card signal on the main picture.
5. Display NTSC colour bar signal through AV1 on the sub picture.
6. Observe the waveform at TP7 and TP6 (CH-1 to TP7).
7. Set the oscilloscope to X-Y mode.
8. Adjust VR7001 so that the red dot is 103°.



PCB-PIP (COMPONENT SIDE)



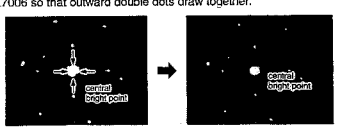
27. PAL Vector

Adjustment purpose Setting each colour to the best result for sub picture which receive PAL signal.

Symptom when incorrectly adjusted Incorrect colour in sub picture when receive PAL signal.

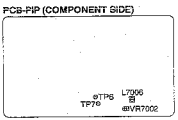
Measuring instrument	Oscilloscope
Test point	CH-1 : TP7 CH-2 : TP6
EXT trigger	---
Measurement range	VID 20mV TIM X-Y mode
Input signal	RF signal (PAL G card)
Input terminal	RF IN terminal

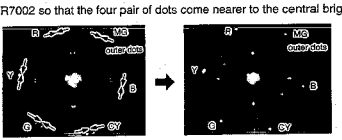
* This adjustment must follow item 24 (PAL Free Run Frequency).
1. Supply an RF signal (PAL G card).
2. Supply a video signal (PAL colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL colour bar signal through AV1 on the main picture.
5. Display PAL G card signal on the sub picture.
6. Observe the waveform at TP7 and TP6 (CH-1 to TP7).
7. Set the oscilloscope to X-Y mode.
8. Adjust L7006 so that outward double dots draw together.



9. Adjust VR7002 so that the four pair of dots come nearer to the central bright point.

PCB-PIP (COMPONENT SIDE)

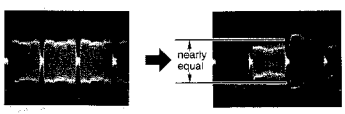




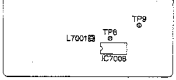
28. SECAM Bell Filter	**Adjustment purpose**	Setting carrier frequency in sub picture when receive SECAM signal.
	Symptom when incorrectly adjusted	The colour is erratic in sub picture when receive SECAM signal.

Measuring instrument	Oscilloscope (Probe 1 : 1)
Test point	TP9
EXT trigger	---
Measurement range	DIV 20mV TIM 20µs
Input signal	RF signal (SECAM colour bar)
Input terminal	RF IN terminal

1. Supply an RF signal (SECAM colour bar).
2. Supply a video signal (PAL colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Dispaly SECAM colour bar signal on the main picture.
5. Display PAL colour bar signal through AV1 on the sub picture.
6. Connect TP8 and Vcc (IC 7008 pin ⑨) through a resistor (220Ω).
7. Observe the waveform at TP9.
8. Adjust L7001 so that the amplitude of the magenta of the adjoining horizontal synchronization shall be nearly equal.
9. Remove a resistor (220Ω).



PCB-PIP (COMPONENT SIDE)

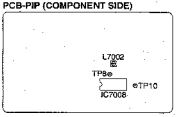


29. SECAM Identification	**Adjustment purpose**	Setting phase of chrominance subcarrier in sub picture when receive SECAM signal.
	Symptom when incorrectly adjusted	Coloured monochrome in sub picture when receive SECAM signal.

Measuring instrument	Oscilloscope
Test point	TP10
EXT trigger	---
Measurement range	DIV 0.2V TIM 0.5ms
Input signal	RF signal (SECAM colour bar)
Input terminal	RF IN terminal

* This adjustment must follow item28 (PIP SECAM Bell Filter).
1. Supply an RF signal (SECAM colour bar).
2. Supply a video signal (PAL colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL colour bar signal through AV1 on the main picture.
5. Display SECAM colour bar signal on the sub picture.
6. Connect TP10 and Vcc (IC7008 pin⑨) through a resistor (10MΩ).
7. Connect TP8 and Vcc (IC7008 pin⑨) through a resistor (220Ω).
8. Observe the waveform at TP10.
9. Adjust L7002 so that the DC level is maximum.
10. Remove two resistors.

PCB-PIP (COMPONENT SIDE)

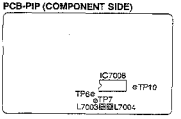


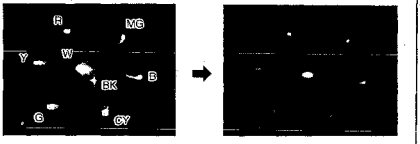
30. SECAM Demodulator	**Adjustment purpose**	Setting each colour to the best result when receive SECAM signal.
	Symptom when incorrectly adjusted	Incorrect colour in sub picture when receive SECAM signal.

Measuring instrument	Oscilloscope
Test point	CH-1 : TP7 CH-2 : TP6
EXT trigger	---
Measurement range	DIV 20mV TIM X-Y mode
Input signal	RF signal (SECAM colour bar)
Input terminal	RF IN terminal

* This adjustment must item29 (PIP SECAM Identification).
1. Supply an RF signal (SECAM colour bar).
2. Supply a video signal (PAL colour bar) to AV1.
3. Set the receiver to PIP mode.
4. Display PAL colour bar signal through AV1 on the main picture.
5. Dispaly SECAM colour bar signal on the sub picture.
6. Connect TP10 and Vcc (IC 7008 pin⑲) through a resistor (10MΩ).
7. Observe the waveform at TP7 and TP6 (CH-1 to TP7).
8. Set the oscilloscope to X-Y mode.
9. Adjust L7003 and L7004 so that the middle bright point corresponding to the black shall be merged.
10. Remove a resistor (10MΩ).

PCB-PIP (COMPONENT SIDE)





PARTS LIST

MODEL : CT – 37C2EDT

In order to expedite delivery of replacement part orders.
Specify : 1. Model number/Serial number
2. Part number and Description
3. Quantity
Unless full information is supplied, delay in execution of orders will result.

⚠ : Critical components

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	± 20	± 30	+ 10 − 10	+ 40 − 20	+ 80 − 20	+ 100 − 0	+ 30 − 10

MARK	B	C	D	F	G
TOLERANCE (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		TUBES	
⚠V 271	255B005001	CRT ASSY	M89KCW11X
		INTEGRATED CIRCUITS	
IC101	272P486010	IC	μPC78M09H
IC201	272P487010	IC	TA8659AN
IC202	272P420010	IC	TEA5114A
IC203	272P420010	IC	TEA5114A
IC204	272P420010	IC	TEA5114A
IC205	263P551030	IC	MC14551BCP
IC207	263P053020	IC	TC4053BP
IC2A1	272P138010	IC	LA7952
IC2A2	266P279010	IC	M51321P
IC2A3	266P064010	IC	M51320P
IC2P2	263P053020	IC	TC4053BP
IC2P3	263P053020	IC	TC4053BP
IC2001	272P055010	IC	AN5860
IC2002	272P181010	IC	CX20125
IC301	263P053020	IC	TC4053BP
IC302	272P145010	IC	STK4132MK2
IC3A1	272P139010	IC	LA7953
IC3A2	272P039010	IC	LC7523
IC3A3	272P396010	IC	BX7601A
IC3A4	272P396010	IC	BX7601A
IC3A5	263P053020	IC	TC4053BP
IC3001	266P982010	IC	AN608P
IC3002	266P982010	IC	AN608P
IC3003	272P283010	IC	TA8662N
IC3004	263P636010	IC	TC6011N
IC3005	263P822020	IC	HM6264ALSP10/12
IC3006	272P284010	IC	TD6710AN
IC3007	267P036020	IC	AFL87F14000A11
IC3008	267P036020	IC	AFL87F14000A11
IC3009	266P546010	IC	RC4558P
IC3014	272P200020	IC	M5201L
IC3015	272P200020	IC	M5201L
IC451	272P239040	IC	LA7838
IC5001	272P406010	IC	TEA2031A
IC601	272P170010	IC	TDA4565 CTI
IC6001	272P292010	IC	CXL1009P
IC6002	267P032020	IC	BX6387
IC6003	272P292010	IC	CXL1009P
IC6004	267P035020	IC	BPF2(B080-2)
IC6005	267P027020	IC	BPF(B074-2)
IC6006	267P035020	IC	BPF2(B080-2)
IC6007	267P032020	IC	BX6387
IC6008	266P982010	IC	AN608P
IC6009	267P032010	IC	BX6386
IC6010	272P262010	IC	CX22013
IC6011	267P028020	IC	SUB(B075-2)
IC6012	263P053020	IC	TC4053BP
IC6013	266P923020	IC	NJM78L09A
IC701	263P155020	IC	μPD75116CW-168
IC702	263P156010	IC	M50554-185SP

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
IC705	263P872030	IC	MN1280-M
IC706	263P869010	IC	μPD6326C
IC707	263P052050	IC	HEF4052BP
IC709	266P727040	IC	μPC339C/LM339N
IC711	266P727040	IC	μPC339C/LM339N
IC712	263P053020	IC	TC4053BP
IC7001	263P795010	IC	M50541FP
IC7002	263P509010	IC	MM74HCU04N/TC74H
IC7003	272P246010	IC	SN74124N
IC7004	266P934070	IC	μPC7805H
IC7005	272P249010	IC	M52684AP
IC7006	272P249010	IC	M52684AP
IC7007	266P636010	IC	LA7950
IC7008	272P171010	IC	TDA4556 MSD
IC7009	272P251010	IC	M52686P
IC7010	263P794040	IC	M5M4C500AL-5
IC7011	272P444010	IC	M526282P
IC7401	263P346010	IC	M50253P
IC7701	272P861010	IC	SAA5191
IC7702	274P179010	IC	SAA9042P
IC7703	274P180010	IC	TC514256AP-80
IC7704	274P178010	IC	PC883C528
IC7705	263P434020	IC	X24C04P
IC901	272P514010	IC	TEA2261
IC950	272P412010	IC	TEA5170
IC951	267P076030	IC	S1-3050C
IC952	266P922010	IC	μPC78M05H
IC953	272P240010	IC	M5237L
IC954	266P910020	IC	μPC574J-K
IC955	272P240010	IC	M5237L
ICSA1	272P570010	IC	M51848P
	930C475001	IC ASSY	IC703(263P683010)
	930C475002	IC ASSY	IC704(263P683010)
		TRANSISTORS	
Q 101	260P543050	TRANSISTOR	JC501-Q
Q 201	260P654030	TRANSISTOR	2SC2058S-Q
Q 202	260P543050	TRANSISTOR	JC501-Q
Q 203	260P543050	TRANSISTOR	JC501-Q
Q 204	260P543050	TRANSISTOR	JC501-Q
Q 207	260P543050	TRANSISTOR	JC501-Q
Q 208	260P544030	TRANSISTOR	JA101-Q
Q 209	260P543050	TRANSISTOR	JC501-Q
Q 210	260P544030	TRANSISTOR	JA101-Q
Q 211	260P543050	TRANSISTOR	JC501-Q
Q 213	260P543050	TRANSISTOR	JC501-Q
Q 214	260P544030	TRANSISTOR	JA101-Q
Q 215	260P544030	TRANSISTOR	JA101-Q
Q 216	260P543050	TRANSISTOR	JC501-Q
Q 217	260P544030	TRANSISTOR	JA101-Q
Q 218	260P544030	TRANSISTOR	JA101-Q
Q 219	260P544030	TRANSISTOR	JA101-Q
Q 220	260P544030	TRANSISTOR	JA101-Q
Q 221	260P544030	TRANSISTOR	JA101-Q
Q 222	260P654030	TRANSISTOR	2SC2058S-Q

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 223	260P544030	TRANSISTOR	JA101-Q
Q 224	260P544030	TRANSISTOR	JA101-Q
Q 2A1	260P543050	TRANSISTOR	JC501-Q
Q 2A2	260P543050	TRANSISTOR	JC501-Q
Q 2A3	260P554030	TRANSISTOR	2SC2058S-Q
Q 2A4	260P543050	TRANSISTOR	JC501-Q
Q 2A5	260P543050	TRANSISTOR	JC501-Q
Q 2A6	260P543050	TRANSISTOR	JC501-Q
Q 2A7	260P543050	TRANSISTOR	JC501-Q
Q 2A8	260P543050	TRANSISTOR	JC501-Q
Q 2A9	260P543050	TRANSISTOR	JC501-Q
Q 2B0	260P544030	TRANSISTOR	JA101-Q
Q 2B2	260P543050	TRANSISTOR	JC501-Q
Q 2B3	260P654030	TRANSISTOR	2SC2058S-Q
Q 2B4	260P543050	TRANSISTOR	JC501-Q
Q 2B5	260P543050	TRANSISTOR	JC501-Q
Q 2B6	260P543050	TRANSISTOR	JC501-Q
Q 2B7	260P544030	TRANSISTOR	JA101-Q
Q 2B8	260P544030	TRANSISTOR	JA101-Q
Q 2B9	260P543050	TRANSISTOR	JC501-Q
Q 2C0	260P543050	TRANSISTOR	JC501-Q
Q 2001	260P544030	TRANSISTOR	JA101-Q
Q 2002	260P543050	TRANSISTOR	JC501-Q
Q 2003	260P543050	TRANSISTOR	JC501-Q
Q 2004	260P543050	TRANSISTOR	JC501-Q
Q 2005	260P543050	TRANSISTOR	JC501-Q
Q 2006	260P543050	TRANSISTOR	JC501-Q
Q 2007	260P543050	TRANSISTOR	JC501-Q
Q 2008	260P543050	TRANSISTOR	JC501-Q
Q 2009	260P543050	TRANSISTOR	JC501-Q
Q 2010	260P543050	TRANSISTOR	JC501-Q
Q 301	260P543050	TRANSISTOR	JC501-Q
Q 302	260P543050	TRANSISTOR	JC501-Q
Q 303	260P544030	TRANSISTOR	JA101-Q
Q 304	260P543050	TRANSISTOR	JC501-Q
Q 305	260P543050	TRANSISTOR	JC501-Q
Q 3A1	260P543050	TRANSISTOR	JC501-Q
Q 3A2	260P387030	TRANSISTOR	2SC2236-Y
Q 3A3	260P544030	TRANSISTOR	JA101-Q
Q 3A4	260P543050	TRANSISTOR	JC501-Q
Q 3A5	260P543050	TRANSISTOR	JC501-Q
Q 3001	260P543050	TRANSISTOR	JC501-Q
Q 3002	260P416030	TRANSISTOR	2SC2274-F
Q 3003	260P543050	TRANSISTOR	JC501-Q
Q 3004	260P543050	TRANSISTOR	JC501-Q
Q 3006	260P543050	TRANSISTOR	JC501-Q
Q 3007	260P543050	TRANSISTOR	JC501-Q
Q 3008	260P543050	TRANSISTOR	JC501-Q
Q 3201	260P543050	TRANSISTOR	JC501-Q
Q 3202	260P543050	TRANSISTOR	JC501-Q
Q 451	260P543050	TRANSISTOR	JC501-Q
Q 501	260P543050	TRANSISTOR	JC501-Q
Q 502	260P543050	TRANSISTOR	JC501-Q
Q 503	260P544030	TRANSISTOR	JA101-Q
Q 504	260P543050	TRANSISTOR	JC501-Q

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 505	260P543050	TRANSISTOR	JC501-Q
Q 506	260P544030	TRANSISTOR	JA101-Q
Q 507	260P543050	TRANSISTOR	JC501-Q
Q 508	260P543050	TRANSISTOR	JC501-Q
Q 551	260P422010	TRANSISTOR	2SC2482
Q 552	260P608010	TRANSISTOR	2SD1879
Q 5006	260P543050	TRANSISTOR	JC501-Q
Q 5501	260P543050	TRANSISTOR	JC501-Q
Q 5502	260P543050	TRANSISTOR	JC501-Q
Q 5503	260P641010	TRANSISTOR	2SC4634/2SC4450
Q 5504	260P543030	TRANSISTOR	JC501-R
Q 601	260P543050	TRANSISTOR	JC501-Q
Q 602	260P543050	TRANSISTOR	JC501-Q
Q 603	260P543050	TRANSISTOR	JC501-Q
Q 604	260P543050	TRANSISTOR	JC501-Q
Q 605	260P543050	TRANSISTOR	JC501-Q
Q 606	260P543050	TRANSISTOR	JC501-Q
Q 607	260P543050	TRANSISTOR	JC501-Q
Q 608	260P543050	TRANSISTOR	JC501-Q
Q 651	260P425040	TRANSISTOR	2SC2688-M, N
Q 652	260P425040	TRANSISTOR	2SC2688-M, N
Q 653	260P425040	TRANSISTOR	2SC2688-M, N
Q 654	260P544030	TRANSISTOR	JA101-Q
Q 655	260P654030	TRANSISTOR	2SC2058S-Q
Q 656	260P654030	TRANSISTOR	2SC2058S-Q
Q 657	260P654030	TRANSISTOR	2SC2058S-Q
Q 658	260P422010	TRANSISTOR	2SC2482
Q 659	260P422010	TRANSISTOR	2SC2482
Q 660	260P422010	TRANSISTOR	2SC2482
Q 6A1	260P543050	TRANSISTOR	JC501-Q
Q 6A3	260P544030	TRANSISTOR	JA101-Q
Q 6001	260P543050	TRANSISTOR	JC501-Q
Q 6002	260P543050	TRANSISTOR	JC501-Q
Q 6003	260P544030	TRANSISTOR	JA101-Q
Q 6004	260P654030	TRANSISTOR	2SC2058S-Q
Q 6005	260P544030	TRANSISTOR	JA101-Q
Q 6006	260P544030	TRANSISTOR	JA101-Q
Q 6007	260P543050	TRANSISTOR	JC501-Q
Q 6008	260P543050	TRANSISTOR	JC501-Q
Q 6009	260P543050	TRANSISTOR	JC501-Q
Q 6010	260P543050	TRANSISTOR	JC501-Q
Q 6011	260P544030	TRANSISTOR	JA101-Q
Q 705	260P543050	TRANSISTOR	JC501-Q
Q 706	260P543050	TRANSISTOR	JC501-Q
Q 713	260P543050	TRANSISTOR	JC501-Q
Q 714	260P544030	TRANSISTOR	JA101-Q
Q 715	260P544030	TRANSISTOR	JA101-Q
Q 716	260P544030	TRANSISTOR	JA101-Q
Q 718	260P543050	TRANSISTOR	JC501-Q
Q 719	260P543050	TRANSISTOR	JC501-Q
Q 7P1	260P543050	TRANSISTOR	JC501-Q
Q 7P2	260P544030	TRANSISTOR	JA101-Q
Q 7Y1	260P543050	TRANSISTOR	JC501-Q
Q 7Y2	260P543050	TRANSISTOR	JC501-Q
Q 7001	260P543050	TRANSISTOR	JC501-Q

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 7002	260P543050	TRANSISTOR	JC501-Q
Q 7003	260P543050	TRANSISTOR	JC501-Q
Q 7004	260P543050	TRANSISTOR	JC501-Q
Q 7005	260P543050	TRANSISTOR	JC501-Q
Q 7006	260P543050	TRANSISTOR	JC501-Q
Q 7007	260P543050	TRANSISTOR	JC501-Q
Q 7008	260P543050	TRANSISTOR	JC501-Q
Q 7009	260P544030	TRANSISTOR	JA101-Q
Q 7010	260P544030	TRANSISTOR	JA101-Q
Q 7011	260P544030	TRANSISTOR	JA101-Q
Q 7012	260P544030	TRANSISTOR	JA101-Q
Q 7013	260P544030	TRANSISTOR	JA101-Q
Q 7014	260P544030	TRANSISTOR	JA101-Q
Q 7015	260P544030	TRANSISTOR	JA101-Q
Q 7017	260P544030	TRANSISTOR	JA101-Q
Q 7018	260P544030	TRANSISTOR	JA101-Q
Q 7019	260P582010	TRANSISTOR	2SK656
Q 7020	260P543050	TRANSISTOR	JC501-Q
Q 7021	260P543050	TRANSISTOR	JC501-Q
Q 7022	260P544030	TRANSISTOR	JA101-Q
Q 7701	260P544030	TRANSISTOR	JA101-Q
Q 7702	260P543050	TRANSISTOR	JC501-Q
Q 7703	260P543050	TRANSISTOR	JC501-Q
Q 7704	260P543050	TRANSISTOR	JC501-Q
Q 7705	260P543050	TRANSISTOR	JC501-Q
Q 7706	260P654030	TRANSISTOR	2SC2058S-Q
Q 7707	260P654030	TRANSISTOR	2SC2058S-Q
Q 7708	260P654030	TRANSISTOR	2SC2058S-Q
Q 7709	260P543050	TRANSISTOR	JC501-Q
Q 7710	260P543050	TRANSISTOR	JC501-Q
Q 7711	260P543050	TRANSISTOR	JC501-Q
Q 7712	260P543050	TRANSISTOR	JC501-Q
Q 7713	260P544030	TRANSISTOR	JA101-Q
Q 8001	260P573020	TRANSISTOR	2SB940A-P
Q 8002	260P574020	TRANSISTOR	2SD1264A-P
Q 8003	260P543050	TRANSISTOR	JC501-Q
Q 8004	260P544030	TRANSISTOR	JA101-Q
Q 8005	260P543050	TRANSISTOR	JC501-Q
Q 8006	260P543050	TRANSISTOR	JC501-Q
Q 8007	260P543050	TRANSISTOR	JC501-Q
Q 8008	260P543050	TRANSISTOR	JC501-Q
Q 8009	260P543050	TRANSISTOR	JC501-Q
Q 8010	260P543050	TRANSISTOR	JC501-Q
Q 8012	260P635010	TRANSISTOR	2SC3055F/2SC3065G
Q 901	260P683010	TRANSISTOR	2SD1887
Q 902	260P543050	TRANSISTOR	JC501-Q
Q 950	260P255040	TRANSISTOR	2SA950-Y
Q 951	260P543050	TRANSISTOR	JC501-Q
Q 952	260P668020	TRANSISTOR	
Q 953	260P668010	TRANSISTOR	2SB1135-R, S
Q 954	260P543050	TRANSISTOR	JC501-Q

DIODES

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
D 101	264P370010	DIODE	1N4148
D 102	264P370010	DIODE	1N4148
D 103	264P370010	DIODE	1N4148
D 104	264P370010	DIODE	1N4148
D 203	264P370010	DIODE	1N4148
D 204	264P370010	DIODE	1N4148
D 205	264P370010	DIODE	1N4148
D 206	264P370010	DIODE	1N4148
D 207	264P370010	DIODE	1N4148
D 2A1	264P488020	DIODE	RD13ED1
D 2A2	264P488020	DIODE	RD13ED1
D 2A3	264P483080	DIODE	RD5.1FB2
D 2A6	264P488020	DIODE	RD13ED1
D 2A7	264P488020	DIODE	RD13ED1
D 2A8	264P483080	DIODE	RD5.1FB2
D 2A9	264P483080	DIODE	RD5.1FB2
D 2B0	264P483080	DIODE	RD5.1FB2
D 2B1	264P483080	DIODE	RD5.1FB2
D 2B2	264P501020	DIODE	HZ2BLL
D 2B3	264P370010	DIODE	1N4148
D 2B4	264P370010	DIODE	1N4148
D 2B5	264P488020	DIODE	RD13ED1
D 2B6	264P488020	DIODE	RD13ED1
D 2P1	264P488020	DIODE	RD13ED1
D 2P2	264P488020	DIODE	RD13ED1
D 2001	264P370010	DIODE	1N4148
D 2002	264P370010	DIODE	1N4148
D 2003	264P370010	DIODE	1N4148
D 2004	264P370010	DIODE	1N4148
D 2005	264P370010	DIODE	1N4148
D 2006	264P370010	DIODE	1N4148
D 301	264P370010	DIODE	1N4148
D 302	264P370010	DIODE	1N4148
D 303	264P374020	DIODE	1N4003ID
D 304	264P370010	DIODE	1N4148
D 3A1	264P463080	DIODE	EQA02-09C/RD9.1EB3
D 3A2	264P465080	DIODE	EQA02-13A/RD13EB3
D 3A3	264P370010	DIODE	1N4148
D 3A5	264P483080	DIODE	RD5.1FB2
D 3B1	264P488060	DIODE	RD15FB1
D 3001	264P464050	DIODE	EQA02-10C
D 3201	264P370010	DIODE	1N4148
D 3202	264P370010	DIODE	1N4148
D 3203	264P370010	DIODE	1N4148
D 3204	264P370010	DIODE	1N4148
D 3205	264P370010	DIODE	1N4148
D 401	264P485070	DIODE	RD7.5FB3
D 451	264P374020	DIODE	1N4003ID
D 453	264P374020	DIODE	1N4003ID
D 454	264P374020	DIODE	1N4003ID
D 502	264P463080	DIODE	EQA02-09C/RD9.1EB3
D 551	264P375010	DIODE	BY228
D 552	264P378010	DIODE	BYW96E
D 553	264P371010	DIODE	BYD33G
D 554	264P295030	DIODE	ES 1F
D 555	264P371010	DIODE	BYD33G

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
D 556	264P371010	DIODE	BYD33G
D 557	264P471070	DIODE	EQA02-35C/RD39EB2
D 558	264P370010	DIODE	1N4148
D 559	264P370010	DIODE	1N4148
D 5001	264P370010	DIODE	1N4148
D 5002	264P370010	DIODE	1N4148
D 5005	264P370010	DIODE	1N4148
D 5006	264P370010	DIODE	1N4148
D 5501	264P370010	DIODE	1N4148
D 5502	264P528010	DIODE	RP 1H
D 602	264P370010	DIODE	1N4148
D 603	264P370010	DIODE	1N4148
D 604	264P370010	DIODE	1N4148
D 605	264P370010	DIODE	1N4148
D 651	264P370010	DIODE	1N4148
D 652	264P370010	DIODE	1N4148
D 653	264P370010	DIODE	1N4148
D 654	264P371010	DIODE	BYD33G
D 655	264P371010	DIODE	BYD33G
D 657	264P370010	DIODE	1N4148
D 658	264P370010	DIODE	1N4148
D 6A1	264P483080	DIODE	RD5.1FB2
D 6A2	264P483080	DIODE	RD5.1FB2
D 705	264P486020	DIODE	RD8.2FB3
D 706	264P370010	DIODE	1N4148
D 707	264P370010	DIODE	1N4148
D 708	264P370010	DIODE	1N4148
D 709	264P370010	DIODE	1N4148
D 711	264P376010	DIODE	1N4148
D 7P2	264P370010	DIODE	1N4148
D 7X1	264P393010	LIGHT EMITTING DIODE	SLC-26VR5F
D 7X2	264P393030	LIGHT EMITTING DIODE	SLC-26DU5F
D 7Y3	264P483080	DIODE	RD5.1FB2
D 7Y4	264P483080	DIODE	RD5.1FB2
D 7001	264P370010	DIODE	1N4148
D 7002	264P370010	DIODE	1N4148
D 7003	264P370010	DIODE	1N4148
D 7004	264P370010	DIODE	1N4148
D 7005	264P370010	DIODE	1N4148
D 7006	264P370010	DIODE	1N4148
D 7007	264P370010	DIODE	1N4148
D 8001	264P370010	DIODE	1N4148
D 8002	264P370010	DIODE	1N4148
D 8003	264P374020	DIODE	IN4003ID
D 8004	264P374020	DIODE	IN4003ID
D 901	264P376010	DIODE	BYW56
D 902	264P376010	DIODE	BYW56
D 903	264P376010	DIODE	BYW56
D 904	264P376010	DIODE	BYW56
D 905	264P371010	DIODE	BYD33G
D 906	264P372010	DIODE	BYV96E
D 907	264P481060	DIODE	RD3.0FB2
D 909	264P481060	DIODE	RD3.0FB2
D 910	264P370010	DIODE	1N4148
D 911	264P484020	DIODE	RD5.6FB1

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
D 912	264P456020	DIODE	RD2.0EB1
D 914	264P458030	DIODE	RD3.6EB2
D 915	264P484020	DIODE	RD5.6FB1
D 950	264P358070	DIODE	RU 4AM
D 951	264P377010	DIODE	BYW95B
D 952	264P566010	DIODE	FMP-G12S
D 953	264P377010	DIODE	BYW95B
D 956	264P377010	DIODE	BYW95B
D 957	264P377010	DIODE	BYW95B
D 958	264P370010	DIODE	1N4148
D 959	264P370010	DIODE	1N4148
D 960	264P370010	DIODE	1N4148
D 961	264P370010	DIODE	1N4148
D 9A1	264P374020	DIODE	IN4003ID
D 9A2	264P370010	DIODE	1N4148
		OTHER SEMICONDUCTORS	
RP901	265P047050	POSITIVE THERMISTOR	PTH BG 180M290
		FILTERS	
CF3001	299P144010	CERAMIC RESONATOR	CSA1B.93MX040
CF501	299P051030	CERAMIC RESONATOR	CSB503F15
CF7001	299P051050	CERAMIC RESONATOR	CSB500F9
CF7002	299P051050	CERAMIC RESONATOR	CSB500F9
CF7003	296P090020	CERAMIC RESONATOR	
LC3001	409P453020	BAND PASS FILTER	20800DAF
LF6001	409P478010	LOW PASS FILTER	
LF6002	409P478010	LOW PASS FILTER	
LF6003	409P458020	BAND PASS FILTER	
LF7001	409P217010	LOW PASS FILTER	
		DELAY LINES	
DF6001	409P432010	DELAY EQUALIZER	
DF6002	409P458020	DELAY EQUALIZER	
DF6003	409P498010	DELAY EQUALIZER	
DL601	337P027020	DELAY LINE	DL-711
DL6001	337P130010	DELAY LINE	
DL7001	337P027020	DELAY LINE	DL-711
		COILS	
	409B058020	CANCEL COIL	
⚠	409B070030	DEGAUSSING COIL	
⚠	330P157020	DEFLECTION YOKE COIL	
L 101	321C031040	RF COIL	10 μ H-K
L 102	321C031040	RF COIL	10 μ H-K
L 201	325C111030	PEAKING COIL	10 μ H-K
L 2A1	325C111030	PEAKING COIL	10 μ H-K
L 2001	325C101060	PEAKING COIL	18 μ H-K
L 3A1	325C121030	PEAKING COIL	10 μ H-K
L 3A2	325C121030	PEAKING COIL	10 μ H-K
L 3A3	325C121030	PEAKING COIL	10 μ H-K
L 3A4	325C121030	PEAKING COIL	10 μ H-K
L 3A5	325C121030	PEAKING COIL	10 μ H-K
L 3A6	325C121030	PEAKING COIL	10 μ H-K

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
L 3A7	325C121030	PEAKING COIL	10 μH-K
L 3A8	325C121030	PEAKING COIL	10 μH-K
L 3A9	325C110070	PEAKING COIL	3.3 μH-K
L 3B0	325C110070	PEAKING COIL	3.3 μH-K
L 3B1	411P001070	FERRITE LEAD	BF60T
L 3B2	411P001070	FERRITE LEAD	BF60T
L 3B3	321C031040	RF COIL	10 μH-K
L 3Y1	325C111030	PEAKING COIL	10 μH-K
L 3Y2	325C111030	PEAKING COIL	10 μH-K
L 3Y3	325C111030	PEAKING COIL	10 μH-K
L 3001	325C108060	PEAKING COIL	820 μH-J
L 3002	325C108060	PEAKING COIL	820 μH-J
L 551	321C030010	RF COIL	1.0 μH-K
L 552	411D009020	FERRITE CORE FILTER	
L 553	409P407010	BRIDGE COIL	
L 554	409P408010	PCC COIL	
L 555	333P018020	H-LIN. COIL	
L 556	409P006080	FILTER COIL	6800 μH-J
L 557	409P556010	FILTER COIL	
L 558	321C031040	RF COIL	10 μH-K
L 5001	325C121030	PEAKING COIL	10 μH-K
L 601	349P187010	DEMODULATOR COIL	
L 602	349P187010	DEMODULATOR COIL	
L 603	349P188010	DL OUT COIL	
L 604	325C106050	PEAKING COIL	15 μH-J
L 605	349P172010	BELL FILTER	
L 606	325C106070	PEAKING COIL	22 μH-J
L 607	349P174010	IDENT COIL	MSD-SECAM
L 608	325C107090	PEAKING COIL	220 μH-J
L 609	325C107030	PEAKING COIL	68 μH-J
L 610	325C107010	PEAKING COIL	47 μH-J
L 611	325C122050	PEAKING COIL	100 μH-K
L 612	325C122050	PEAKING COIL	100 μH-K
L 613	321C031040	RF COIL	10 μH-K
L 654	321C031020	RF COIL	6.8 μH-K
L 6001	349P144020	DL MATCH COIL	14 μH
L 6002	325C102050	PEAKING COIL	100 μH-K
L 6003	325C162050	PEAKING COIL	100 μH-K
L 6004	411P011010	BEAD FERRITE	ZBF503S-P
L 6005	325C162050	PEAKING COIL	100 μH-K
L 6006	409P402030	EMI FILTER	DSS306-55FZ103N100
L 6007	409P402030	EMI FILTER	DSS306-55FZ103N100
L 6008	325C162050	PEAKING COIL	100 μH-K
L 6009	325C162050	PEAKING COIL	100 μH-K
L 6010	325C166020	PEAKING COIL	8.2 μH-J
L 6011	325C166010	PEAKING COIL	6.8 μH-J
L 6012	321C031040	RF COIL	10 μH-K
L 6014	325C121050	PEAKING COIL	15 μH-K
L 701	325C106050	PEAKING COIL	15 μH-J
L 7Y1	325C111030	PEAKING COIL	10 μH-K
L 7Y2	325C111030	PEAKING COIL	10 μH-K
L 7001	349P172010	BELL FILTER	
L 7002	349P174010	IDENT COIL	MSD-SECAM
L 7003	349P173010	DEMODULATOR COIL	
L 7004	349P173010	DEMODULATOR COIL	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
L 7005	325C106040	PEAKING COIL	12 μH-J
L 7006	349P185010	DL OUT COIL	
L 7007	321C031040	RF COIL	10 μH-K
L 7008	321C030070	RF COIL	3.3 μH-K
L 7009	325C120010	PEAKING COIL	1.0 μH-M
L 7010	325C120010	PEAKING COIL	1.0 μH-M
L 7011	325C120010	PEAKING COIL	1.0 μH-M
L 7014	325C120010	PEAKING COIL	1.0 μH-M
L 7015	325C120010	PEAKING COIL	1.0 μH-M
L 7016	325C120010	PEAKING COIL	1.0 μH-M
L 7017	411P013020	FERRITE LEAD	
L 7018	411P013020	FERRITE LEAD	
L 7401	325C106030	PEAKING COIL	10 μH-J
L 7402	321C031040	RF COIL	10 μH-K
L 7701	321C031040	RF COIL	10 μH-K
L 7702	325C121050	PEAKING COIL	15 μH-K
L 7703	321C030010	RF COIL	1.0 μH-K
L 7706	321C030010	RF COIL	1.0 μH-K
L 7707	409P752010	SWITCH COIL	13.5MHz
L 8001	411D009020	FERRITE CORE FILTER	
L 8002	325C106050	PEAKING COIL	15 μH-J
L 8003	325C106090	PEAKING COIL	33 μH-J
L 901	411P001070	FERRITE LEAD	BF60T
L 903	411P001070	FERRITE LEAD	BF60T
L 904	321C030050	RF COIL	2.2 μH-K
L 905	325C121010	PEAKING COIL	6.8 μH-K
L 951	325D059060	PEAKING COIL	390 μH-K
L 952	321C041050	RF COIL	J1SC-3212-0.4
L 956	321C131080	RF COIL	47MHz+-7.5%
L 958	411D009020	FERRITE CORE FILTER	
△L 991	351P011020	LINE FILTER	
△L 992	351P092010	LINE FILTER	253Y2R0-01
△L 996	351P092010	LINE FILTER	253Y2R0-01
LC201	320P051010	TRAP COIL	4.43MHz
LC202	320P051020	TRAP COIL	4.28MHz
LC2A1	320P051030	TRAP COIL	3.58MHz
LC2A2	320P051020	TRAP COIL	4.28MHz
LC2A3	320P051010	TRAP COIL	4.43MHz
LC7Y1	320P051010	TRAP COIL	4.43MHz
LC7003	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7004	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7005	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7006	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7007	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7008	409P402030	EMI FILTER	DSS306-55FZ103N100
LC7009	409P402010	EMI FILTER	DSS306-55B101M100
LC7010	409P402010	EMI FILTER	DSS306-55B101M100
LC7011	409P402040	EMI FILTER	DSS306-54B470M100
		TRANSFORMERS	
LC7001	349P159050	CHROMA-BP	
LC7002	349P159010	CHROMA-BP	
T 551	336P009030	H.DRIVE	
△T 552	334P183040	FLYBACK	
T 5501	409P567010	FOCUS	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
△T 901	350P481030	POWER	
△T 902	336P023010	DRIVE	POWER
		VARIABLE RESISTORS	
VR201	127C081000	VR-SEMIFIXED	1/5W B30KΩ-M
VR202	127C080060	VR-SEMIFIXED	1/5W B3KΩ-M
VR451	127C180070	VR-SEMIFIXED	1/5W B5KΩ-M
VR452	127C191000	VR-SEMIFIXED	1/5W B30KΩ-M
VR501	127C080040	VR-SEMIFIXED	1/5W B1KΩ-M
VR5001	127C180040	VR-SEMIFIXED	1/5W B1KΩ-M
VR5002	127C181060	VR-SEMIFIXED	1/5W B1MΩ-M
VR5003	127C180070	VR-SEMIFIXED	1/5W B5KΩ-M
VR601	127C080050	VR-SEMIFIXED	1/5W B2KΩ-M
VR602	127C080070	VR-SEMIFIXED	1/5W B5KΩ-M
VR603	127C080080	VR-SEMIFIXED	1/5W B10KΩ-M
VR651	127C020040	VR-SEMIFIXED	1/5W B1KΩ-N
VR652	127C020040	VR-SEMIFIXED	1/5W B1KΩ-N
VR653	127C020040	VR-SEMIFIXED	1/5W B1KΩ-N
VR654	127C020050	VR-SEMIFIXED	1/5W B2KΩ-N
VR655	127C020050	VR-SEMIFIXED	1/5W B2KΩ-N
VR6001	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6002	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6003	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6004	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6005	127C090030	VR-SEMIFIXED	1/5W B500Ω-M
VR6006	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6007	127C090040	VR-SEMIFIXED	1/5W B1KΩ-M
VR6008	127C090050	VR-SEMIFIXED	1/5W B2KΩ-M
VR7001	127C080080	VR-SEMIFIXED	1/5W B10KΩ-M
VR7002	127C080010	VR-SEMIFIXED	1/5W B200Ω-M
VR7003	127C080070	VR-SEMIFIXED	1/5W B5KΩ-M
VR7701	127C180080	VR-SEMIFIXED	1/10W B10KΩ-M
VR951	127C080080	VR-SEMIFIXED	1/5W B10KΩ-M
		RESISTORS	
R 322	109P052010	FUSE	1/4W 100Ω-J
R 323	109P052010	FUSE	1/4W 100Ω-J
R 3C7	103P586010	NETWORK	1/8W 1MΩ-J
R 3C8	103P586010	NETWORK	1/8W 1MΩ-J
△R 451	103P378040	FUSE	1/4W 2.2Ω-J
R 551	109D067070	CEMENT WIRE	10W 2.7Ω-K
△R 553	103P442020	FUSE METAL	1W 560Ω-K/J
△R 554	109P052040	FUSE	1/4W 1.2Ω-J
△R 555	103P398010	FUSE	1/2W 1.2Ω-J
△R 556	103P397090	FUSE	1/2W 0.82Ω-J
△R 559	103P392050	FUSE	1/2W 1.0KΩ-J
R 566	102P172080	CEMENT METAL	5W 1.8KΩ-K/J
△R 568	103P397090	FUSE	1/2W 0.82Ω-J
△R 570	103P392020	FUSE	1/2W 560Ω-J
△R 5519	103P392050	FUSE	1/2W 1.0KΩ-J
△R 671	103P438030	FUSE METAL	2W 1.8Ω-K/J
△R 675	103P372050	FUSE	1/4W 1KΩ-J
△R 676	103P372050	FUSE	1/4W 1KΩ-J
△R 677	103P372050	FUSE	1/4W 1KΩ-J
R 701	103P623040	NETWORK	1/8W 5.6KΩ-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 716	103P583030	NETWORK	1/8W 4.7KΩ-J
△R 8014	103P370010	FUSE	1/4W 10Ω-J
△R 8015	103P370050	FUSE	1/4W 22Ω-J
△R 8016	103P370010	FUSE	1/4W 10Ω-J
R 901	102P083010	CEMENT WIRE	10W 2.2Ω-K
R 906	109D075060	CEMENT WIRE	10W 1KΩ-J
△R 960	103P397090	FUSE	1/2W 0.82Ω-J
R 992	102P082080	CEMENT WIRE	10W 2.7Ω-K
		CAPACITORS AND TRIMMERS	
C 557	189P071080	C-M-PLASTIC-PP	200V 0.47μF-J
C 558	189P071010	C-M-PLASTIC-PP	200V 0.56μF-J
C 559	189P081030	C-M-PLASTIC-PP	200V 0.82μF-J
C 560	189P071020	C-M-PLASTIC-PP	200V 0.51μF-J
C 567	189P081020	C-M-PLASTIC-PP	200V 0.22μF-J
C 710	189P092010	ELECTROLYTIC-C	FU5.5V 0.047μF-Z
C 904	185D062070	ELECTROLYTIC-C	450DV 330μF-M
△C 913	189P091010	CERAMIC CAPACITOR	AC400V E4700pF-M
CR971	149P008010	CR-MULTIPLE	470pF&3.6μF-K
VC3001	202P109030	TRIMMER CAPACITOR	5.5pF-30pF
VC3002	202P109030	TRIMMER CAPACITOR	5.5pF-30pF
VC701	202P109050	TRIMMER CAPACITOR	9.8pF-60pF
VC7001	202P109030	TRIMMER CAPACITOR	5.5pF-30pF
VC7002	202P109030	TRIMMER CAPACITOR	5.5pF-30pF
		SWITCHES	
S 2001	129P007090	VR-CH-PRESETTER	SW-BAND
S 3A1	432P052030	PUSH SWITCH	2-2 LOCK-TYPE
S 3A2	432P052030	PUSH SWITCH	2-2 LOCK-TYPE
S 401	129P007090	VR-CH-PRESETTER	SW-BAND
S 7Y1	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y2	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y3	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y4	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y5	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y7	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Y8	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Z0	431C068030	SLIDE SWITCH	2-3 NON-SHORT
S 7Z1	431C067010	SLIDE SWITCH	2-2 NON SHORT
S 7Z2	432P101010	KEY BOARD SWITCH	1-1 H=4.3
S 7Z5	432C038020	PUSH SWITCH	
△S 991	432P076030	PUSH SWITCH	2-1 AC250V 5A L18
		MISCELLANEOUS	
	338P025020	CPM ASSY	
	641D758010	WEDGE	3P DEF-YOKE SETTING
△F 991	283D091040	FUSE	T2A
IP101	295P097010	TUNER HF PACK	
J 2A1	451C058010	CONNECTOR	21P
J 2A2	451C058010	CONNECTOR	21P
J 2A3	449C102010	SOCKET DIN MINI	4P
J 3A1	451C114010	PIN JACK(2P)	RED+WHITE
J 3A2	440C191010	PUSH TERMINAL 8P	
J 3Y1	451C119010	HEADPHONE JACK	
△J 601	449C085010	CRT SOCKET	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
J 7Y2	451C114010	PIN JACK(2P)	RED+WHITE
J 7Y3	451C106050	PIN JACK	
J 7Y1	449C093010	SOCKET DIN MINI	4P (S+SW)
K 301	287P060010	POWER RELAY	DH12D2-DS(M)
⚠K 9A1	287P029050	POWER RELAY	
X 3001	285P092010	CRYSTAL RESONATOR	5.85MHz
X 3002	285P093010	CRYSTAL RESONATOR	5.824MHz
X 601	285P132010	CRYSTAL RESONATOR	4.4336MHz
X 602	285P131010	CRYSTAL RESONATOR	3.5795MHz
X 6001	285P079010	CRYSTAL RESONATOR	21.325MHz
X 701	285P063040	CRYSTAL RESONATOR	4.19430MHz
X 702	285P073020	CRYSTAL RESONATOR	7.15909MHz
X 7001	285P073020	CRYSTAL RESONATOR	7.15909MHz
X 7002	285P068030	CRYSTAL RESONATOR	8.8MHz
X 7701	285P062030	CRYSTAL RESONATOR	13.875MHz
X 7702	285P139010	CRYSTAL RESONATOR	12MHz
⚠Z 5001	299P087060	SURGE PROTECTOR	PRF 2000
Z 701	939P226010	PREAMP UNIT	SBX1483
⚠Z 950	299P132010	SURGE PROTECTOR	PRF 5000
⚠Z 951	299P087060	SURGE PROTECTOR	PRF 3150
⚠Z 952	299P132010	SURGE PROTECTOR	PRF 5000
⚠Z 953	299P132010	SURGE PROTECTOR	PRF 5000
		PRINTED CIRCUIT BOARD ASSY'S	
⚠	930D015001	A/V SW PCB ASSY	
⚠	920D276090	ADG PCB ASSY	
⚠	920D278090	AV PCB ASSY	
⚠	920D311040	CONTROL PCB ASSY	
⚠	930C377001	DCF PCB ASSY	
⚠	920D277090	DEFL REG PCB ASSY	
⚠	930C498002	NICAM PCB ASSY	
⚠	930C381001	PCC/DBF PCB ASSY	
⚠	930C378001	PIP PCB ASSY	
⚠	920D310090	POWER SUB PCB ASSY	
⚠	930C608005	SIGNAL PCB ASSY	
⚠	930C607002	SW PCB ASSY	
⚠	930C441001	TERMINAL PCB ASSY	
⚠	930C382001	VMCRT PCB ASSY	
⚠	920D280050	Y/C-SW PCB ASSY	
⚠	920D279050	YUV PCB ASSY	
		MECHANICAL PARTS	
	6690107010	SCREW	M3X12
	6690130020	SCREW	4X16
	6690220010	SCREW	3X6 46LA005
	6690220020	SCREW	3X8 46LA005
	6690220030	SCREW	3X10 46LA005
	6690221080	SCREW	4X16 46LA005
	6690212010	SCREW	3X12
	6690212040	SCREW	3X10
	6690222060	SCREW	3X16-12
		COSMETIC PARTS	
⚠	246C022030	AC POWER CORD	
	702C949010	CONTROL CASE ASSY	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
⚠	700C147040	BACK COVER	
	701D086070	FRONT CABINET ASSY	
	224D243010	CRT CAP	
	641D173010	CLIP	AC POWER CORDE
	702D225080	CONTROL DOOR ASSY	
	704C738010	POWER KNOB	
	734D283010	PUSH KNOB	
	734D284010	PUSH KNOB	
	734D353010	SLIDE KNOB	
	701B258030	FRONT PANEL	
	926P013080	SPEAKER SYSTEM	
	761A078080	TERMINAL BOARD	
	761D628010	SPEAKER HOLDER	
		PACKING PARTS AND ACCESSORY	
	803A325010	PACKING CUSHION	
	802B395010	PACKING CASE	
	802B395060	PACKING CASE	
	831D110090	PACKING BAG	
	831D174090	PACKING BAG	
	244D229010	CABLE	VFF L=1500 2P
⚠	872C083000	INSTRUCTION BOOK	
⚠	939P486010	REMOTE HAND UNIT	

〔MEMO〕

LEAD DRESSING

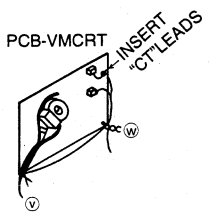
The lead wires to be clamped are listed in the table below.

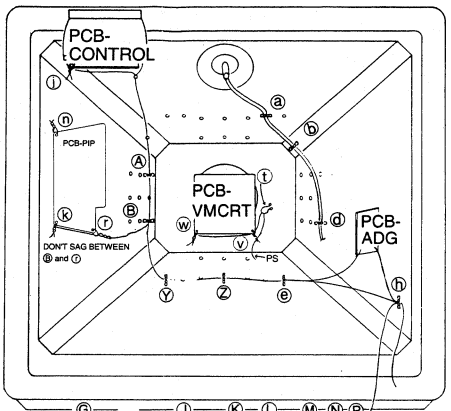
Note: The inner wires are clamped so that they do not come close to the heat generating or high-tension parts. After servicing route all wires in their original position.

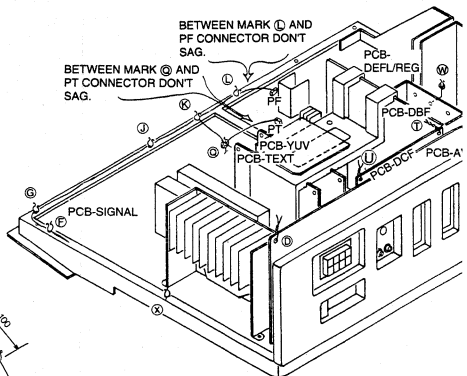
The anode lead wires are routed so no tensile strength is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

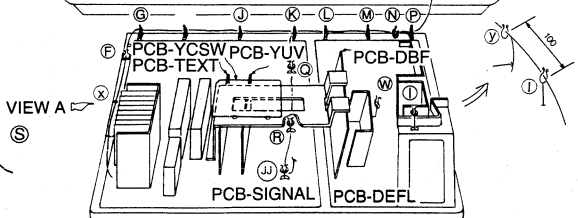
CONNECTOR LEAD FOR CLAMP

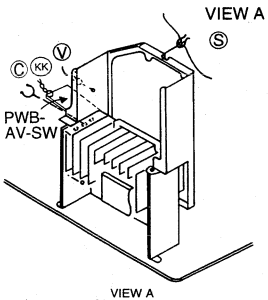
CLAMP	LEAD TO BE CLAMPED
A	DC,KY,PE,PJ,NS,DB,SC
B	EARTH LEAD FROM SA,SC,DC,KY,PE, PJ,NS,DB,YP,FP,FK,SM,FH
C	SN,SD,LD2,AU2,ST,KY,PJ,SC
D	AP
F	KY,PJ,EP,PF
G	KY,PJ,EP,PF
J	KY,PJ,EP,LD,RA,PF
K	PT,PJ,EP,LD,RA,AP,PF
L	EP,LD,RA,PT,EA,AP,PF
M	EP,LD,RA,PC,PT,EA
N	EP,LD,RA,PC,PT,PL,EA
P	EP,LD,RA,PC,PT,PL,EA
Q	PT,PJ,AP,DA,CA,SM,TD
R	PJ,DA,CA,CT,AP,PA,LP,CM,FH,FK,SM,TD
S	DB,DC,FP,FK,SM,YP,FH
T	DC,DB,CT,PA,CB,CC,CA,AE,AD,AC,AF, LP,DA,AY,AL,AP,FK,FP,FH,SM,YP
U	YP,DC,LP,DA,AP,AK,FP,FK,SM,DB,FH(2 LAYERS CLAMP)
V	KY,PJ,SC,SN,SD,LD2,AU2,ST
W	PY,CX,DV,DF1,TD,LEADS FROM DY
Y	PE,SC,KY,PJ
Z	PE
a	ANODE LEAD
b	ANODE LEAD
d	ANODE LEAD
e	PE,PY,CX,LEADS FROM DY
g	DF1
h	PT,PG,PL,PY,EP,RA,LD, EA,PC,FROM DG-COIL
j	PJ,NS
k	FP,FK,SM,LEADS FROM DG-COIL
l	DF2,F1,F2,G2,DF1,SB
n	FP
r	FP,FK,SM,YP,FH,NS
t	PS,SA,LEADS FROM DY
v	SA,CA,F1,F2,DF2,SB,MY,PS(2 LAYER CLAMP)
w	SA,PS,CC,CB,CT,PA,CA(2 LAYER CLAMP)
x	SC,EP
y	F1,F2,DF2,G2,PS
AA	SB
BB	SB
CC	DV,DF1
JJ	DA,CC,CA,CB,CT,AP,PA,LP,FP,CM,FH,FK,SM,TD
KK	AV, AW

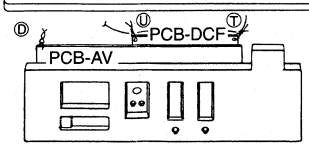


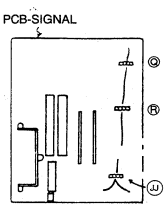












gh-tension parts. After servicing route all

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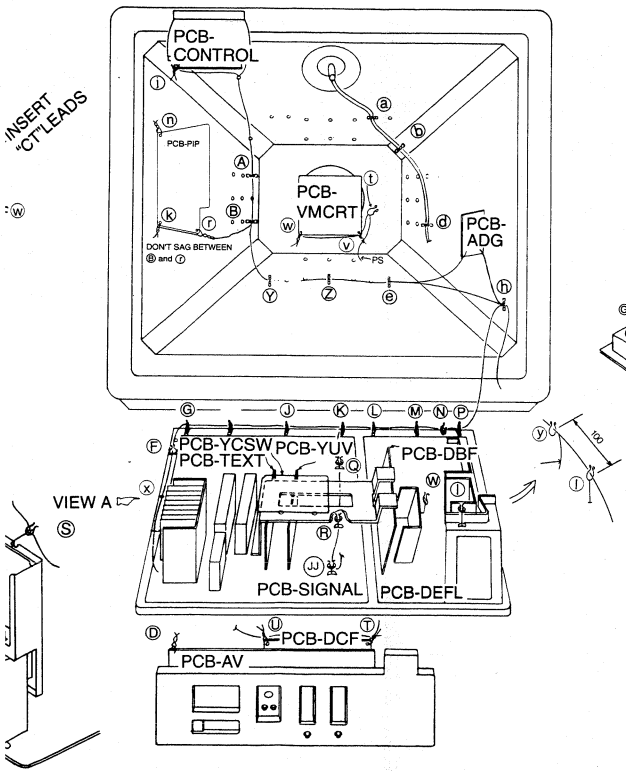
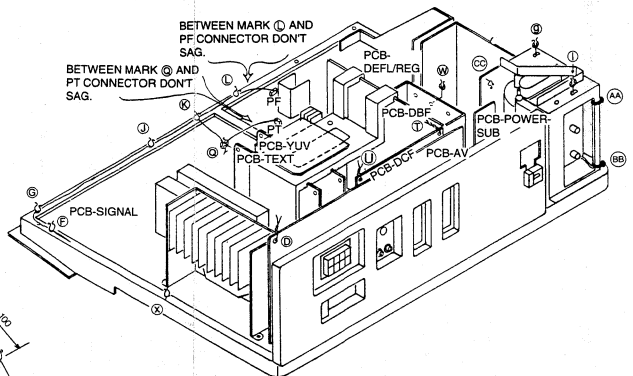
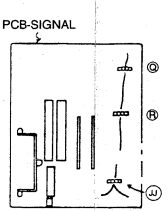
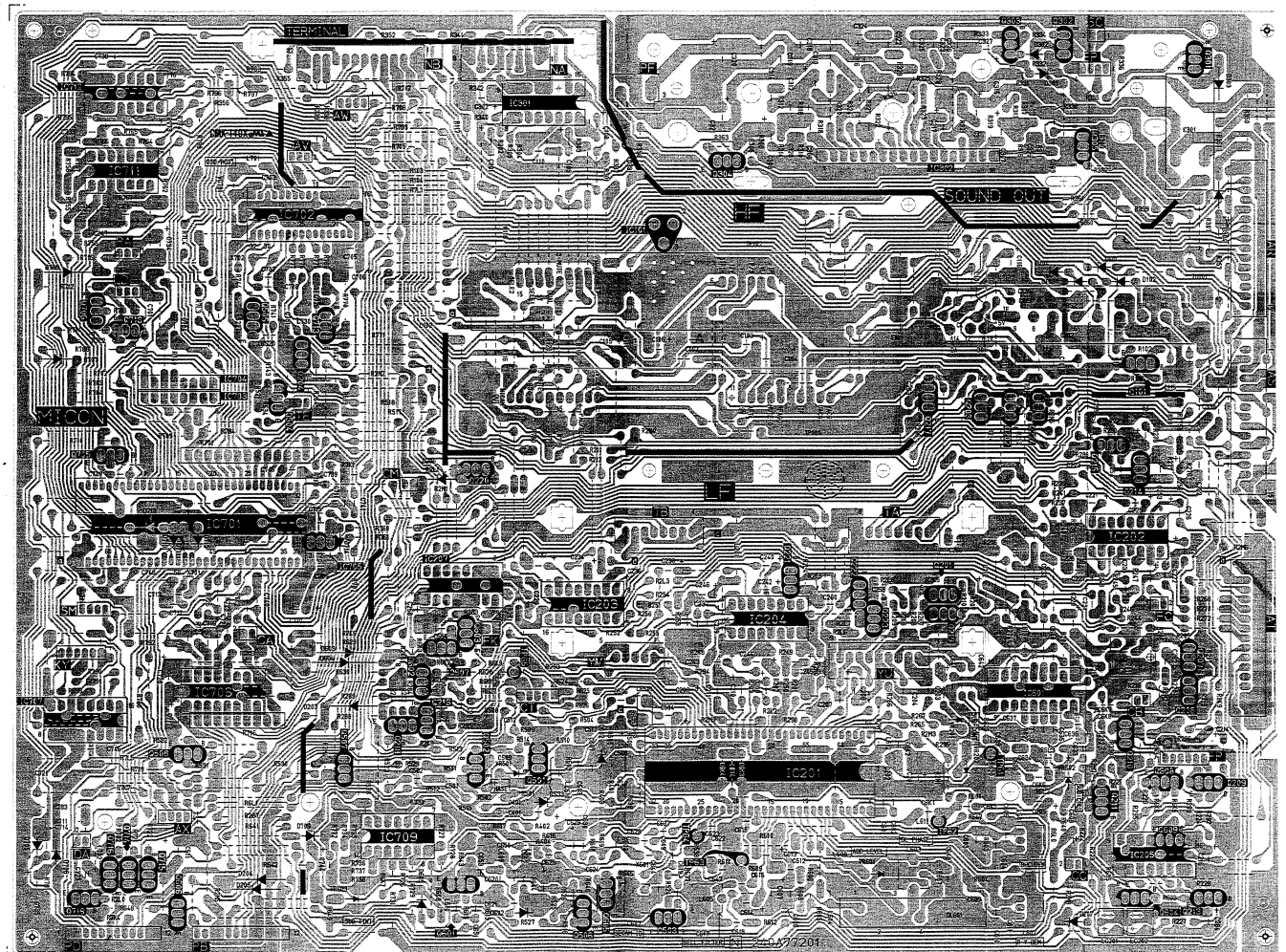






CLAMP FOR CONNECTOR LEAD

CONNECTOR	CLAMP
ANODE LEAD	a-b-d
AC	T
AD	T
AE	T
AF	T
AK	U
AL	T
AP	L-K-Q-R-JJ-T-U-D
AU2	V-C
AT	T
AY	T
CA	v-w-Q-R-JJ-T
CB	w-JJ-T
CC	w-JJ-T
CM	R-JJ
CT	w-R-JJ-T
CX	e-W
DA	U-Q-R-JJ-T
DB	A-B-S-U-T
DC	A-B-S-U-T
DF1	W-cc-g-l
DF2	y-v-l
DV	W-cc
EA	L-M-N-P-h
EP	x-F-G-J-K-L-M-N-P-h
F1	y-v-l
F2	y-v-l
FH	r-B-S-U(2 LAYERS CLAMP)-T-JJ-R
FK	k-r-B-S-U-T-JJ-R
FP	n-k-r-B-S-U-T-JJ
G2	l-y
KY	A-B-Y-V-C-F-G-J
LD	J-K-L-M-N-P-h
LD2	V-C
LP	U-T-JJ-R
MY	v
NS	j-A-B-r
PA	w-T-JJ-R
PC	M-N-P
PE	A-B-Y-Z-e
PF	F-G-J-K-L
PG	h
PJ	j-A-B-Y-V-C-F-G-J-K-Q-R
PL	N-P-h
PS	w-v(2 LAYERS CLAMP)-t-y
PT	Q-K-L-M-N-P-h
PY	e-h-W
RA	J-K-L-M-N-P-h
SA	t-v-w(2 LAYERS CLAMP)
SB	v-l-AA-BB
SC	A-B-Y-V-C-X
SD	V-C
SM	k-r-B-S-U-T-JJ-R-Q
SN	V-C
ST	V-C
TD	Q-R-JJ-W
YP	r-B-S-U-T
AV	KK
AW	KK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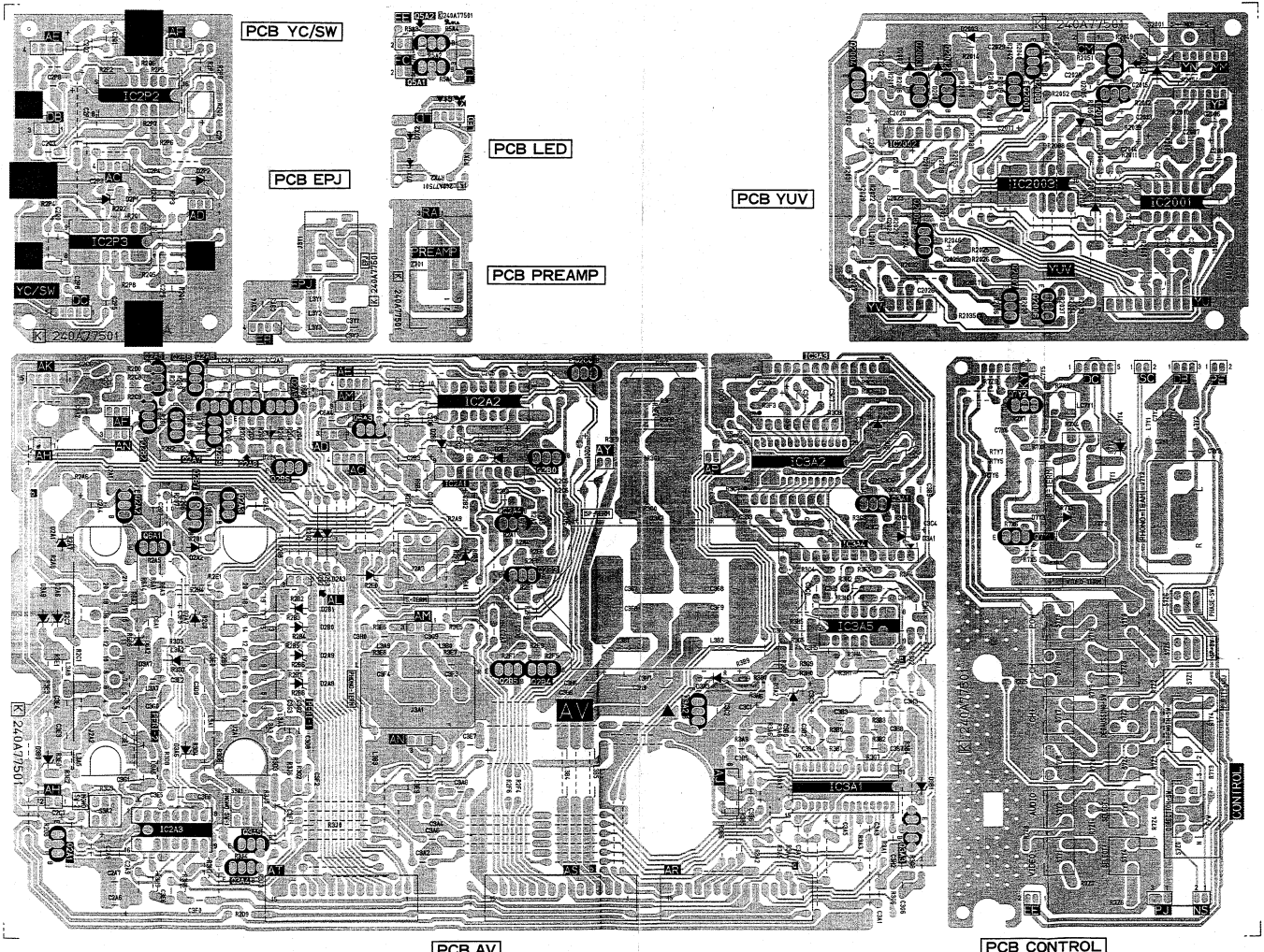
PCB SIGNAL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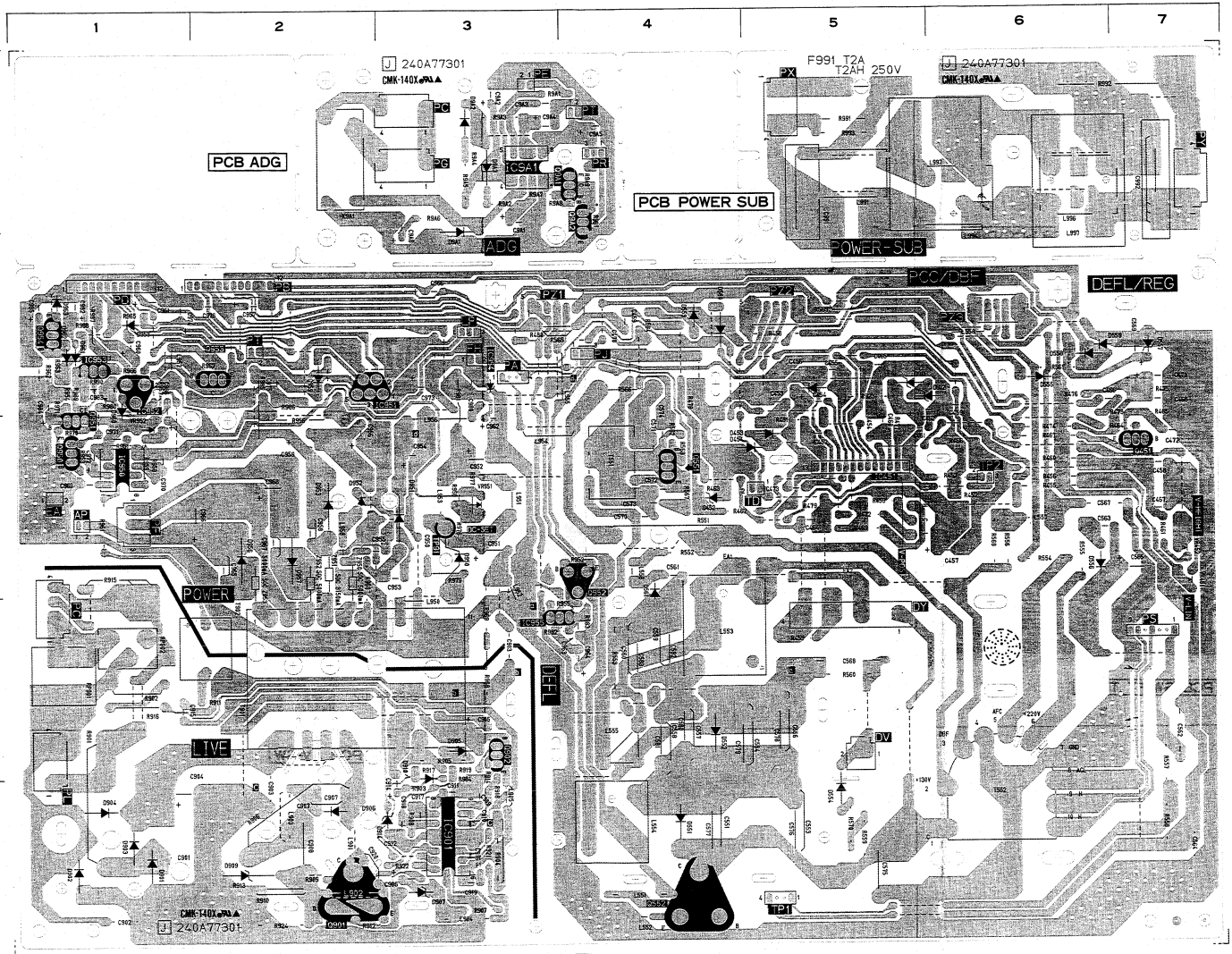
PCB AV
PCB CONTROL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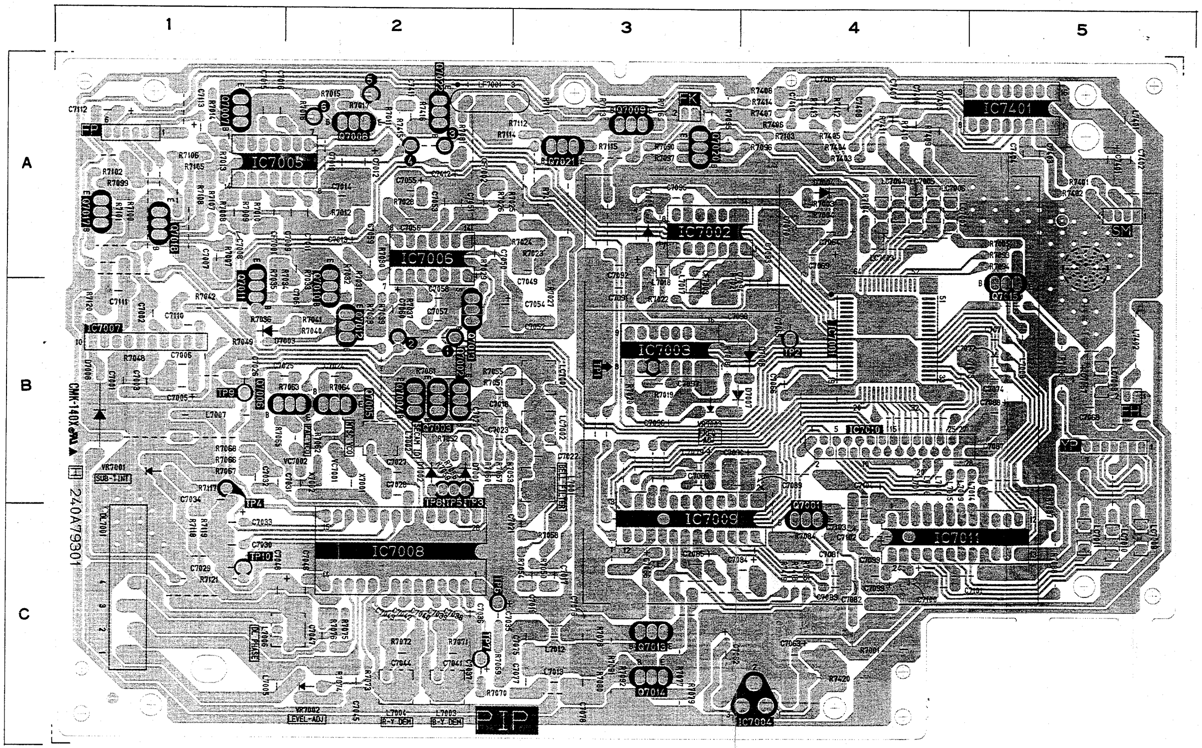
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TP2
TP6 TP5 TP3
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VR7002
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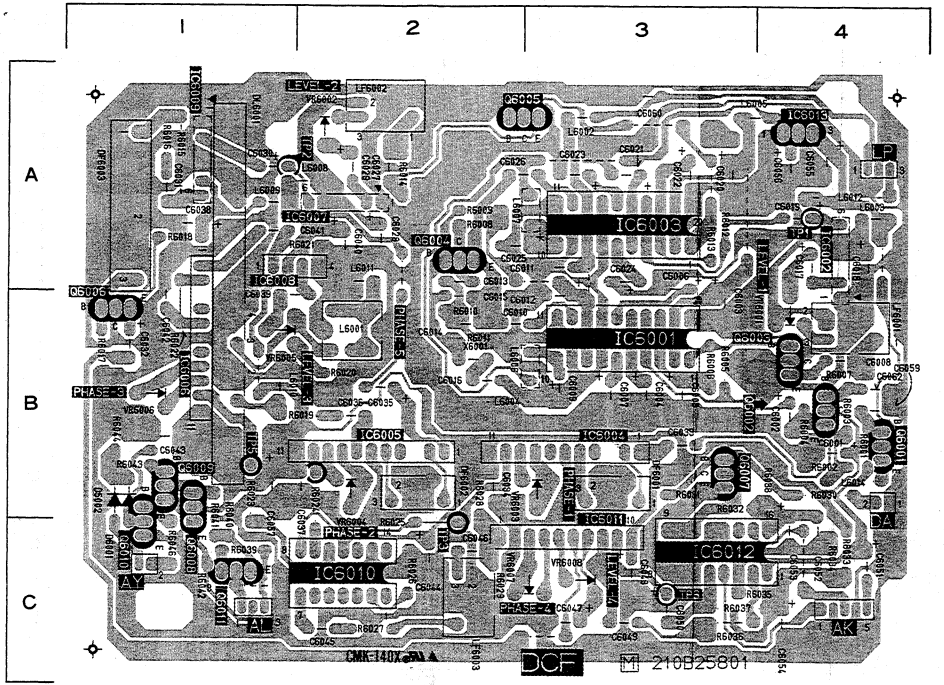
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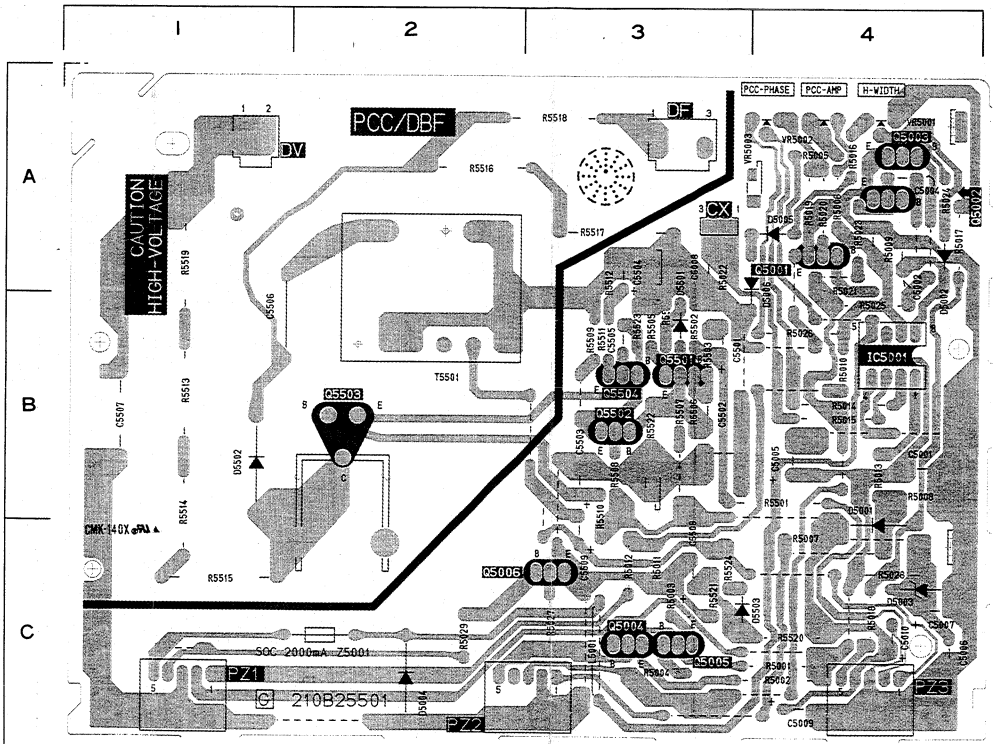
PCB DCF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Q5002
Q5001
IC5001
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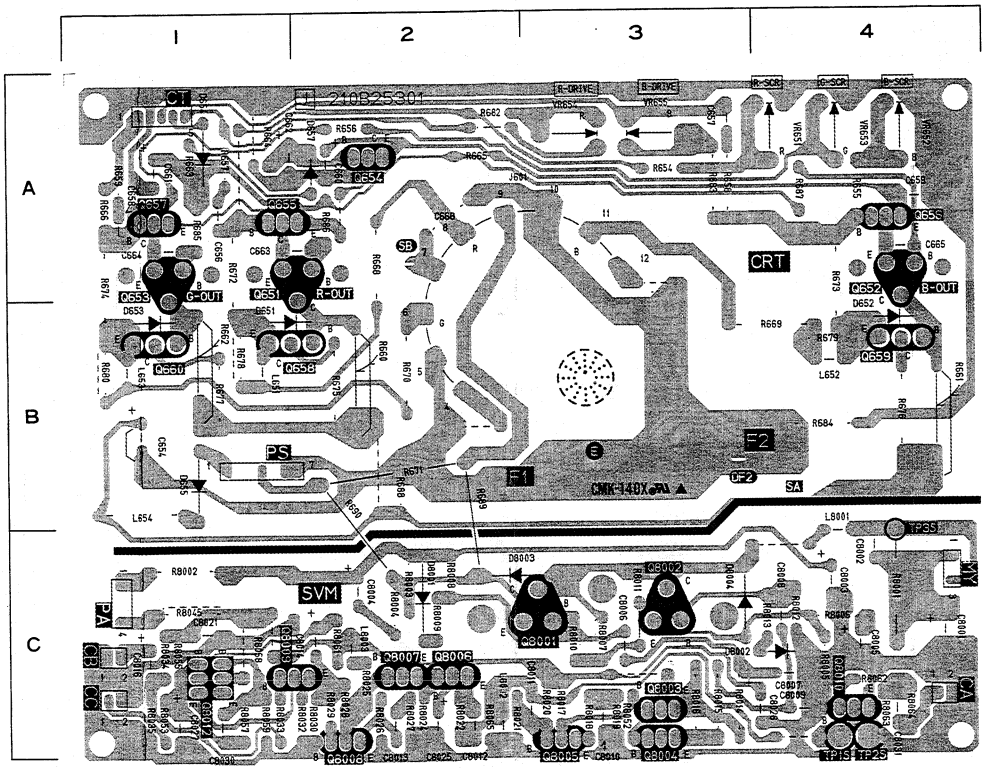
PCB PCC/DBF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G-OUT
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CC
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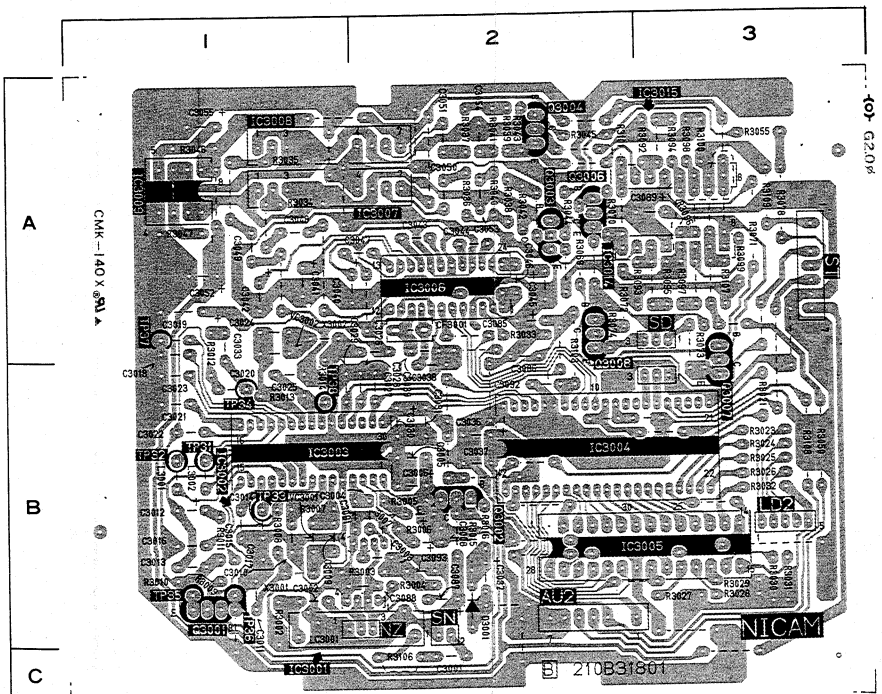
CK
AK

PCB VMCRT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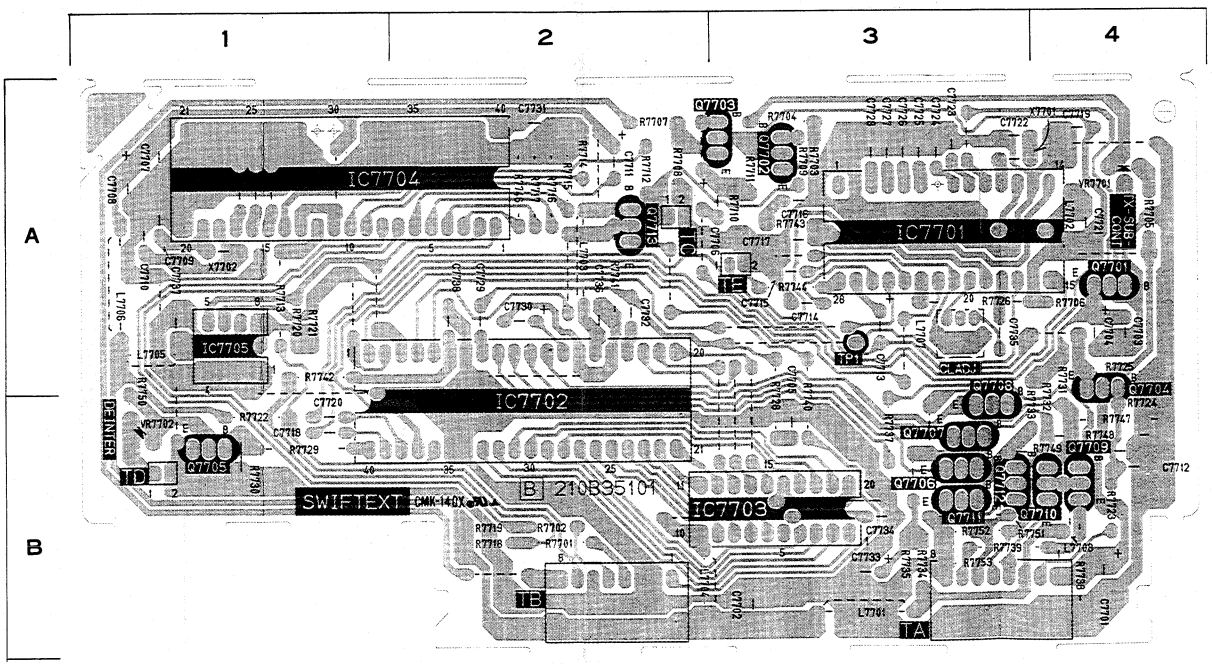
PCB-NICAM



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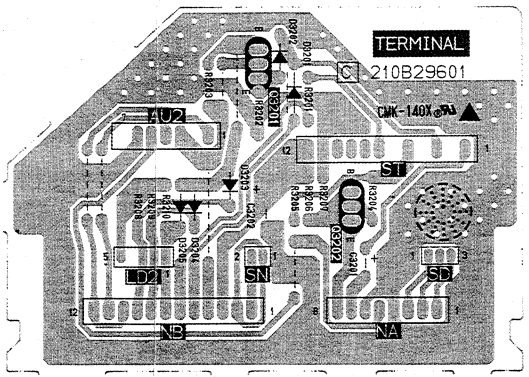

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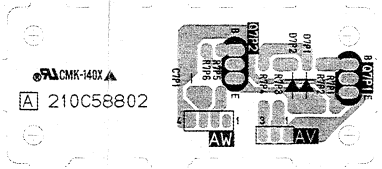

PCB AV-SW

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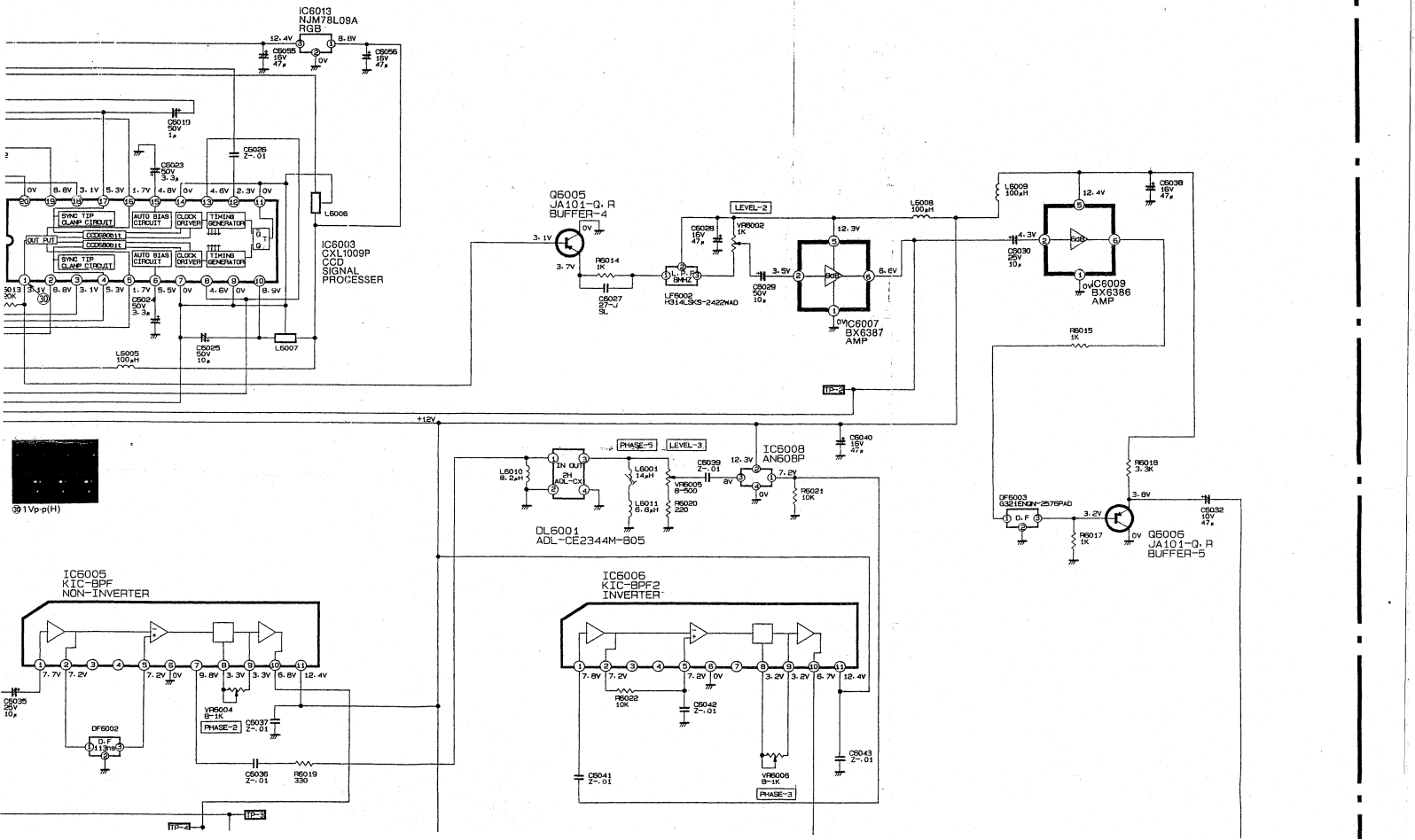
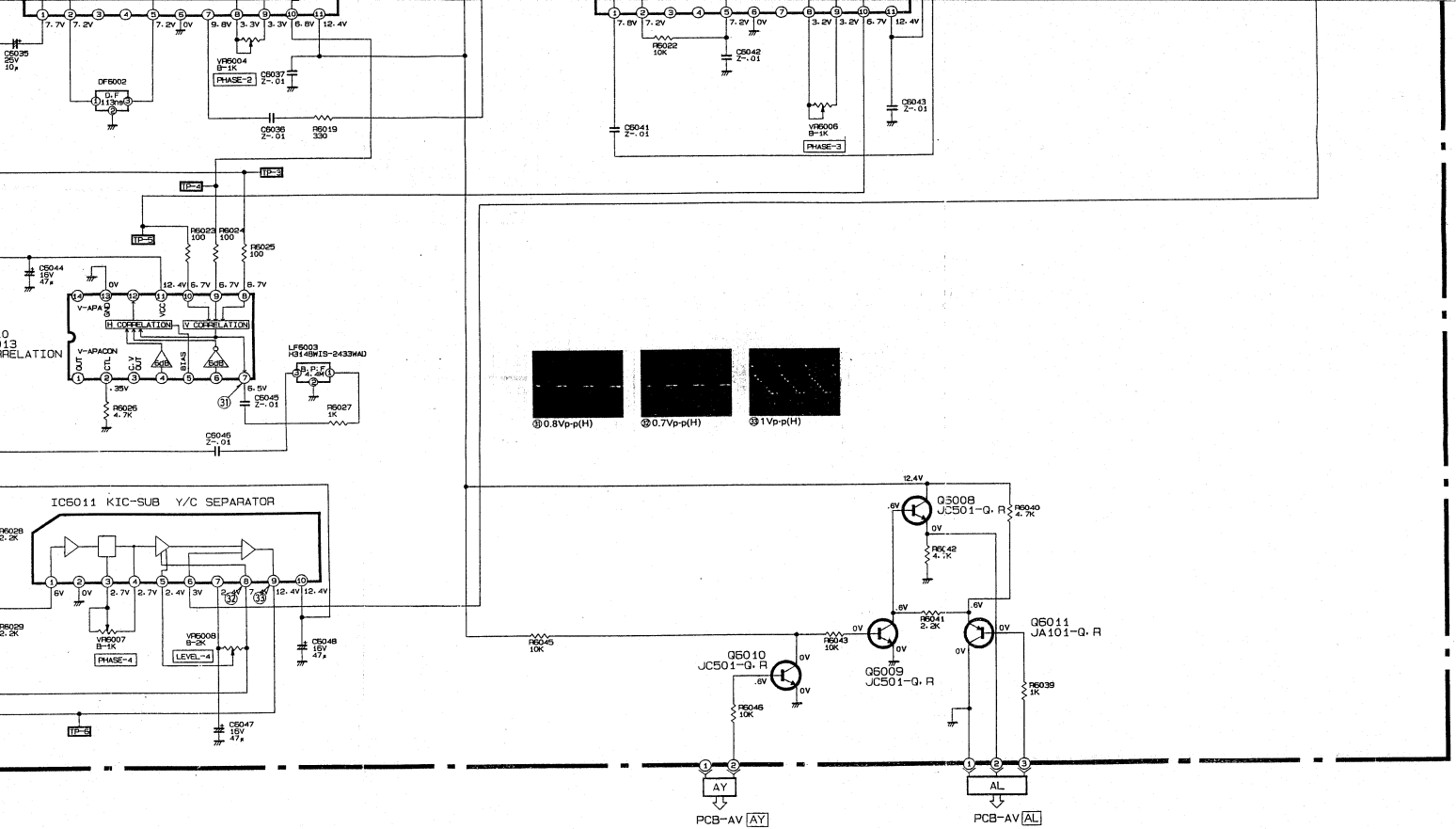
⚠ PCB-DCF

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DF6002
D.F
0.13mH
VR6004
B-1K
PHASE-2
C6037
Z-.01
C6036
Z-.01
R6019
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7.8V
7.2V
7.2V
0V
R6022
10K
C6042
Z-.01
3.2V
3.2V
6.7V
12.4V
C6041
Z-.01
VR6006
B-1K
PHASE-3
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TP-3
TP-5
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R6024
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C6044
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6.7V
6.7V
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V CORRELATION
V-APACON
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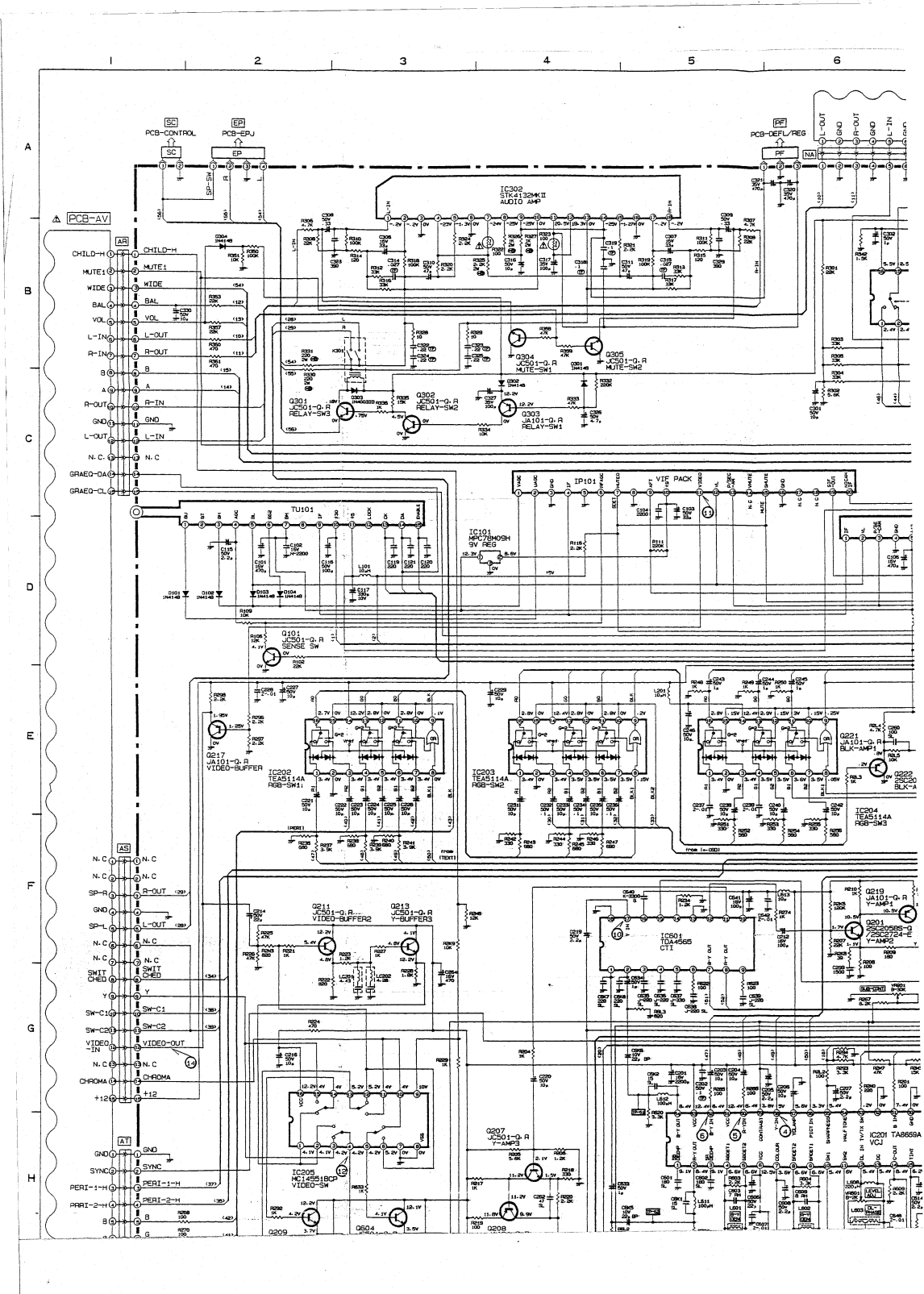
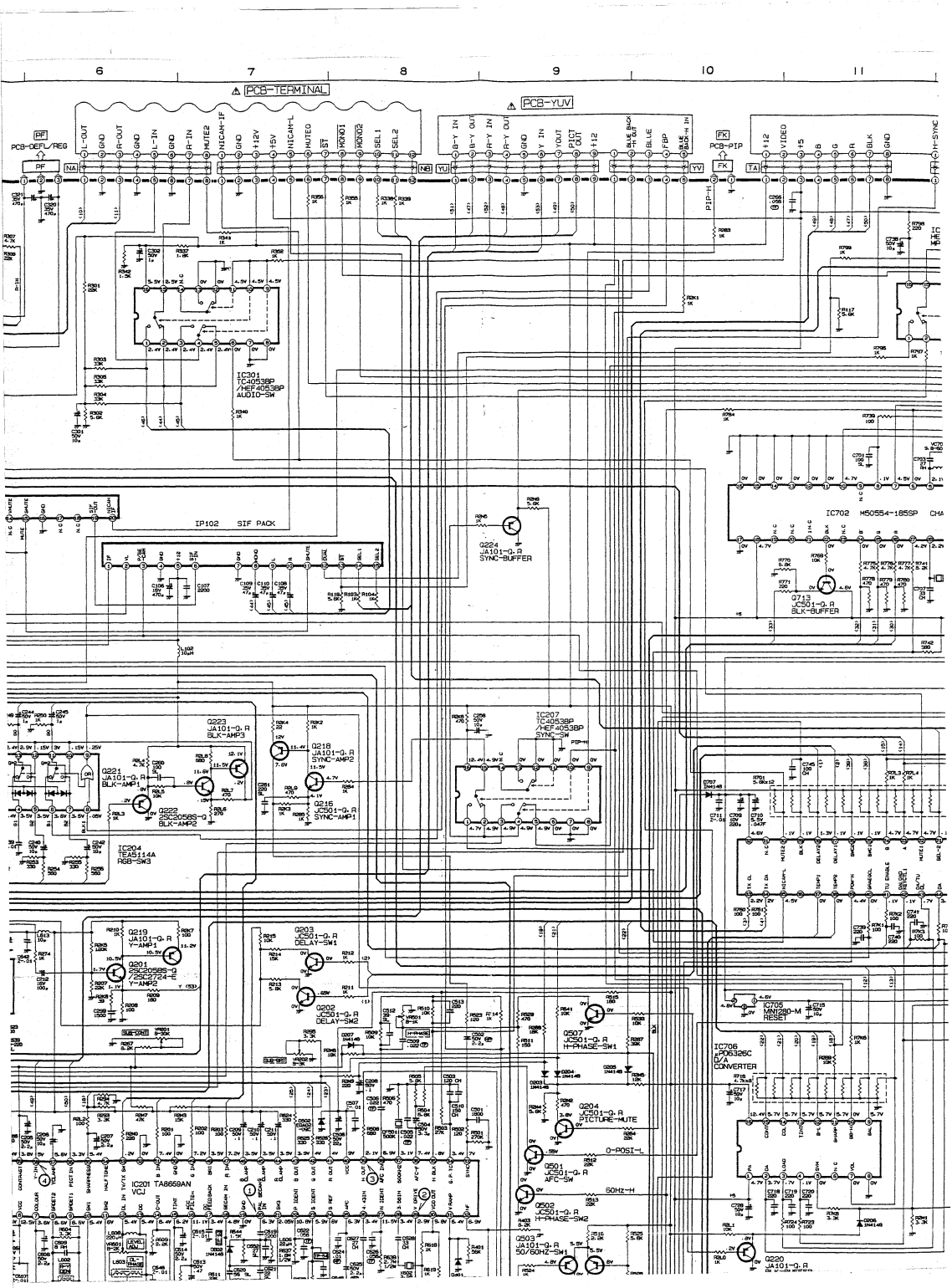
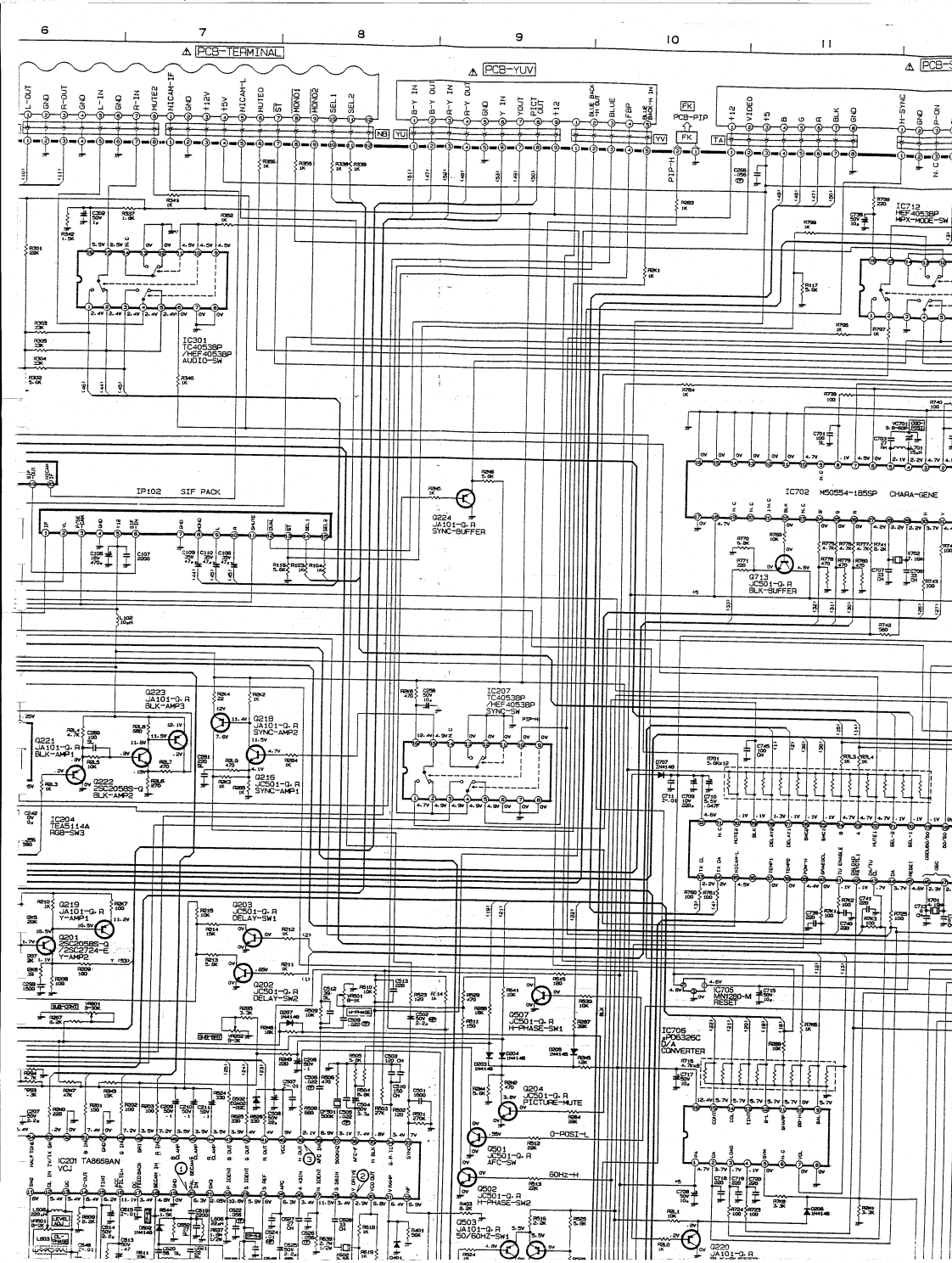
1K
C6046
Z-.01
0.8Vp-p(H)
0.7Vp-p(H)
1Vp-p(H)
IC6011 KIC-SUB Y/C SEPARATOR
6V
0V
2.7V
2.7V
2.4V
3V
12.4V
12.4V
R6028
2.2K
R6029
2.2K
VR6007
B-1K
PHASE-4
VR6008
B-2K
LEVEL-4
C6048
16V
47μ
C6047
16V
47μ
TP-6
12.4V
Q5008
JC501-Q.R
.6V
0V
R6040
4.7K
R6042
4.1K
R6045
10K
R6043
10K
R6041
2.2K
Q6011
JA101-Q.R
Q6010
JC501-Q.R
Q6009
JC501-Q.R
R6046
10K
R6039
1K
AY
PCB-AV AY
AL
PCB-AV AL

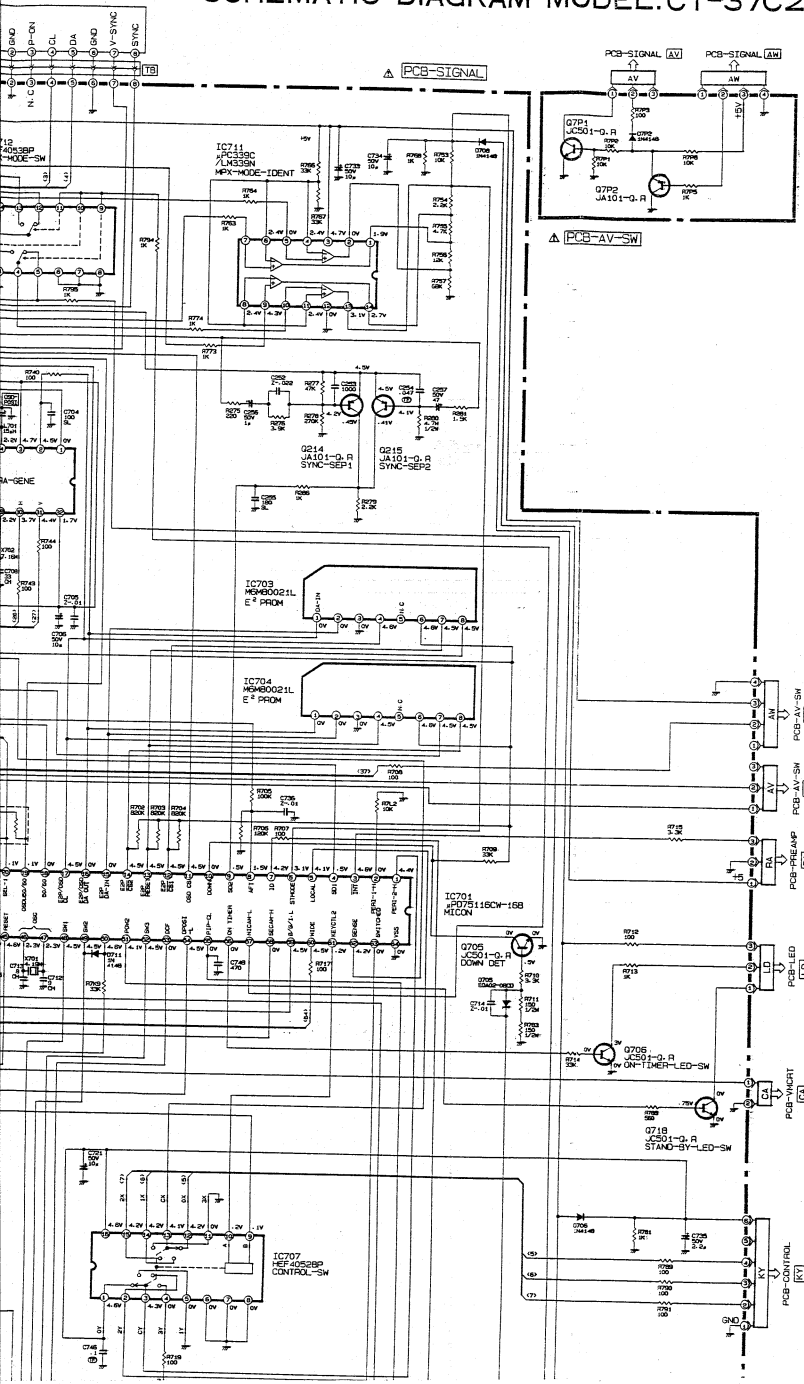

PCB-AV
PCB-CONTROL
PCB-EPJ
PCB-DEFL/REG
IC302
STK4132MKII
AUDIO AMP
IP101
VIF PACK
TU101
IC101
MPC78M09H
9V REG
IC202
TEA5114A
RGB-SW1
IC203
TEA5114A
RGB-SW2
IC204
TEA5114A
RGB-SW3
IC601
TDA4565
CTI
IC201
TA8659A
VCJ
IC205
MC14551BCP
VIDEO-SW
Q301
JC501-Q,R
RELAY-SW3
Q302
JC501-Q,R
RELAY-SW2
Q303
JA101-Q,R
RELAY-SW1
Q304
JC501-Q,R
MUTE-SW1
Q305
JC501-Q,R
MUTE-SW2
Q101
JC501-Q,R
SENSE SW
Q217
JA101-Q,R
VIDEO-BUFFER
Q211
JC501-Q,R
VIDEO-BUFFER2
Q213
JC501-Q,R
Y-BUFFER3
Q207
JC501-Q,R
Y-AMP3
Q219
JA101-Q,R
Y-AMP1
Q201
2SC2058S-Q
Y-AMP2
Q221
JA101-Q,R
BLK-AMP1
Q222
2SD1820
BLK-AMP2
Q209
Q604
Q208
AR
AS
AT
AU
AV
SC
EP
PF
NA
CHILD-H
MUTE1
WIDE
BAL
VOL
L-IN
R-IN
B
A
R-OUT
GND
L-OUT
N.C
GRAEQ-DA
GRAEQ-CL
SP-R
SP-L
SWIT CHED
SW-C1
SW-C2
VIDEO-IN
VIDEO-OUT
CHROMA
+12
SYNC
PERI-1-H
PERI-2-H
L-OUT
GND
R-OUT
GND
L-IN
GND


6
7
8
9
10
11
PCB-TERMINAL
PCB-YUV
PCB-DEFL/REG
PCB-PIP
L-OUT
GND
R-OUT
L-IN
R-IN
MUTE2
NICAM-IF
+12V
+5V
NICAM-L
MUTED
ST
MONO1
MONO2
SEL1
SEL2
B-Y IN
B-Y OUT
R-Y IN
R-Y OUT
Y IN
YOUT
PICT OUT
BLUE BACK IN OUT
BLUE
FBP
BLK IN
VIDEO
B
G
R
BLK
H-SYNC
IC301
TC40538P
/HEF40538P
AUDIO-SW
IP102 SIF PACK
Q224
JA101-Q,R
SYNC-BUFFER
IC702 M50554-185SP
Q713
JC501-Q,R
BLK-BUFFER
Q223
JA101-Q,R
BLK-AMP3
Q221
JA101-Q,R
BLK-AMP1
Q222
2SC2058S-Q
BLK-AMP2
Q218
JA101-Q,R
SYNC-AMP2
Q216
JC501-Q,R
SYNC-AMP1
IC307
TC40538P
/HEF40538P
SYNC-SW
IC204
TEA5114A
RGB-SW3
Q219
JA101-Q,R
Y-AMP1
Q201
2SC2058S-Q
/2SC3724-E
Y-AMP2
Q203
JC501-Q,R
DELAY-SW1
Q202
JC501-Q,R
DELAY-SW2
IC705
MM1280-M
RESET
Q507
JC501-Q,R
H-PHASE-SW1
IC706
PD6326C
D/A
CONVERTER
Q204
JC501-Q,R
PICTURE-MUTE
Q501
JC501-Q,R
AFC-SW
0-POSI-L
50Hz-H
Q502
JC501-Q,R
H-PHASE-SW2
IC201 TA8659AN
VCJ
Q503
JA101-Q,R
50/60HZ-SW1
Q220
JA101-Q,R


PCB-TERMINAL
PCB-YUV
PCB-PIP
IC301
TC4053BP
/HEF4053BP
AUDIO-SW
IC712
HEF4053BP
MPX-MODE-SW
IP102 SIF PACK
Q224
JA101-Q,R
SYNC-BUFFER
IC702 M50554-185SP CHARA-GENE
Q713
JC501-Q,R
BLK-BUFFER
Q223
JA101-Q,R
BLK-AMP3
Q218
JA101-Q,R
SYNC-AMP2
Q221
JA101-Q,R
BLK-AMP1
Q222
2SC2058S-Q
BLK-AMP2
Q215
JC501-Q,R
SYNC-AMP1
IC207
TC4053BP
/HEF4053BP
SYNC-SW
IC204
TEA5114A
RGB-SW3
Q219
JA101-Q,R
Y-AMP1
Q201
2SC2058S-Q
2SC2724-L
Y-AMP2
Q203
JC501-Q,R
DELAY-SW1
Q202
JC501-Q,R
DELAY-SW2
Q507
JC501-Q,R
H-PHASE-SW1
Q204
JC501-Q,R
PICTURE-MUTE
Q501
JC501-Q,R
AFC-SW
Q502
JC501-Q,R
H-PHASE-SW2
Q503
JA101-Q,R
50/60HZ-SW1
Q220
JA101-Q,R
IC705
MN1280-M
RESET
IC706
PD6326C
A/A
CONVERTER
IC201
TA8659AN
VCJ

PCB-SWIFTEXT

SCHEMATIC DIAGRAM MODEL:CT-37C2EDT



SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.

DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

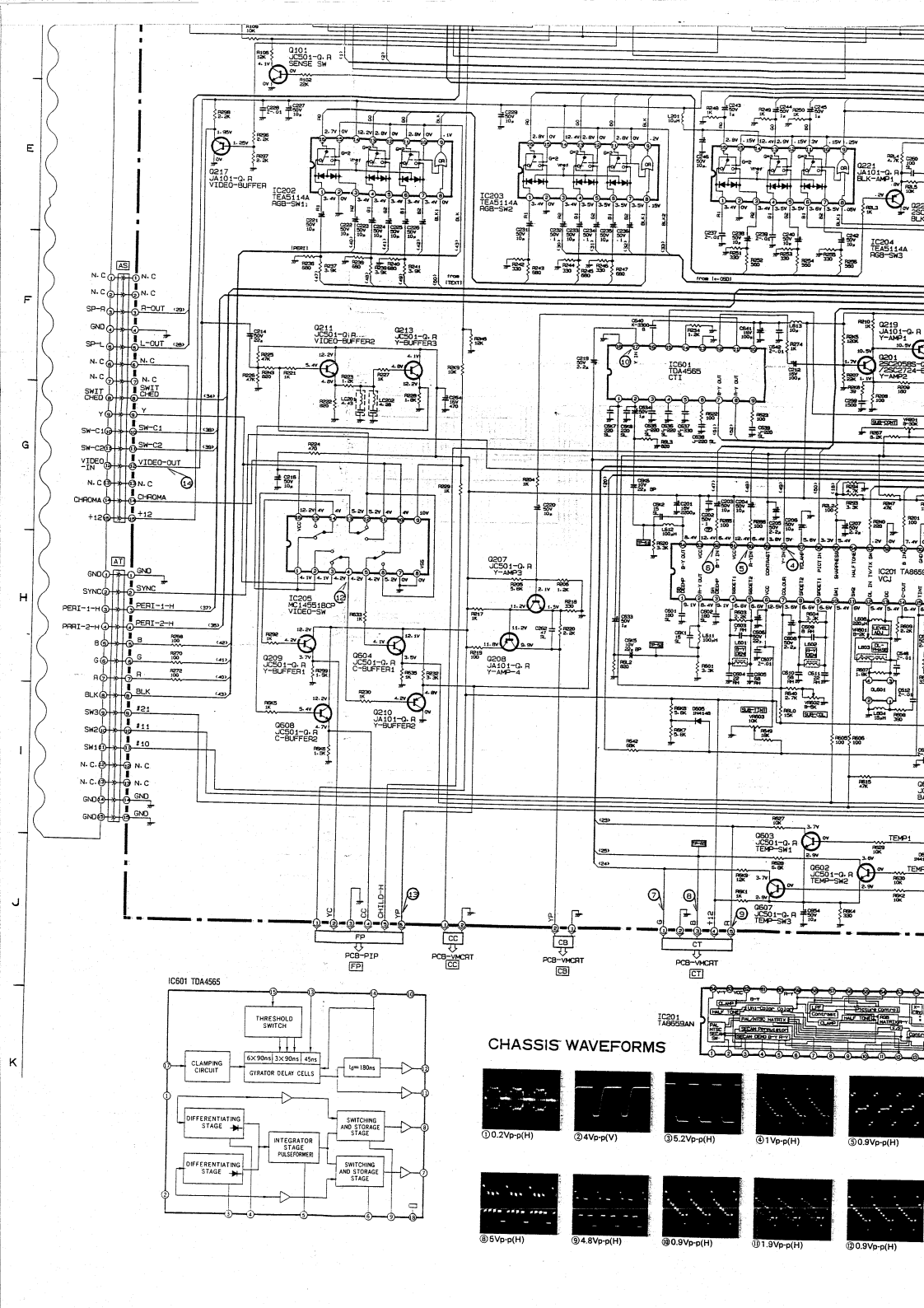
1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   - (CE) : Cemented resistor
   - (MB) : Metal oxide film resistor (type B)
   - (MPC) : Metal plate cement resistor.
   - (ML) : Metal linear resistor.
   - (S) : Fixed composition resistor
   - (W) : Wire wound resistor
   - (M) : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - (ALM) : Aluminus electrolytic capacitor
   - (MF) : Polyester capacitor
   - (PP) : Polypropylene film capacitor
   - (TANT) : Tantalum capacitor
   - (TF) : Twin film capacitor.
   - (MF PP) : Polyester polypropylene film capacitor.
   - (MPP) : Metallize plastic film capacitor.
   - (NP) : Non polarized electrolytic capacitor.
   - (PS) : Styrol capacitor.
   - (SC) : Semi conductor capacitor.
   - (+) : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically designated is: 50V
10. The tolerance of capacitor value, if not specifically designated is:
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% P = +100% 0% Z = +80% −20%
    C = ±0.25PF D = ±0.5PF F = ±1PF N = ±30%

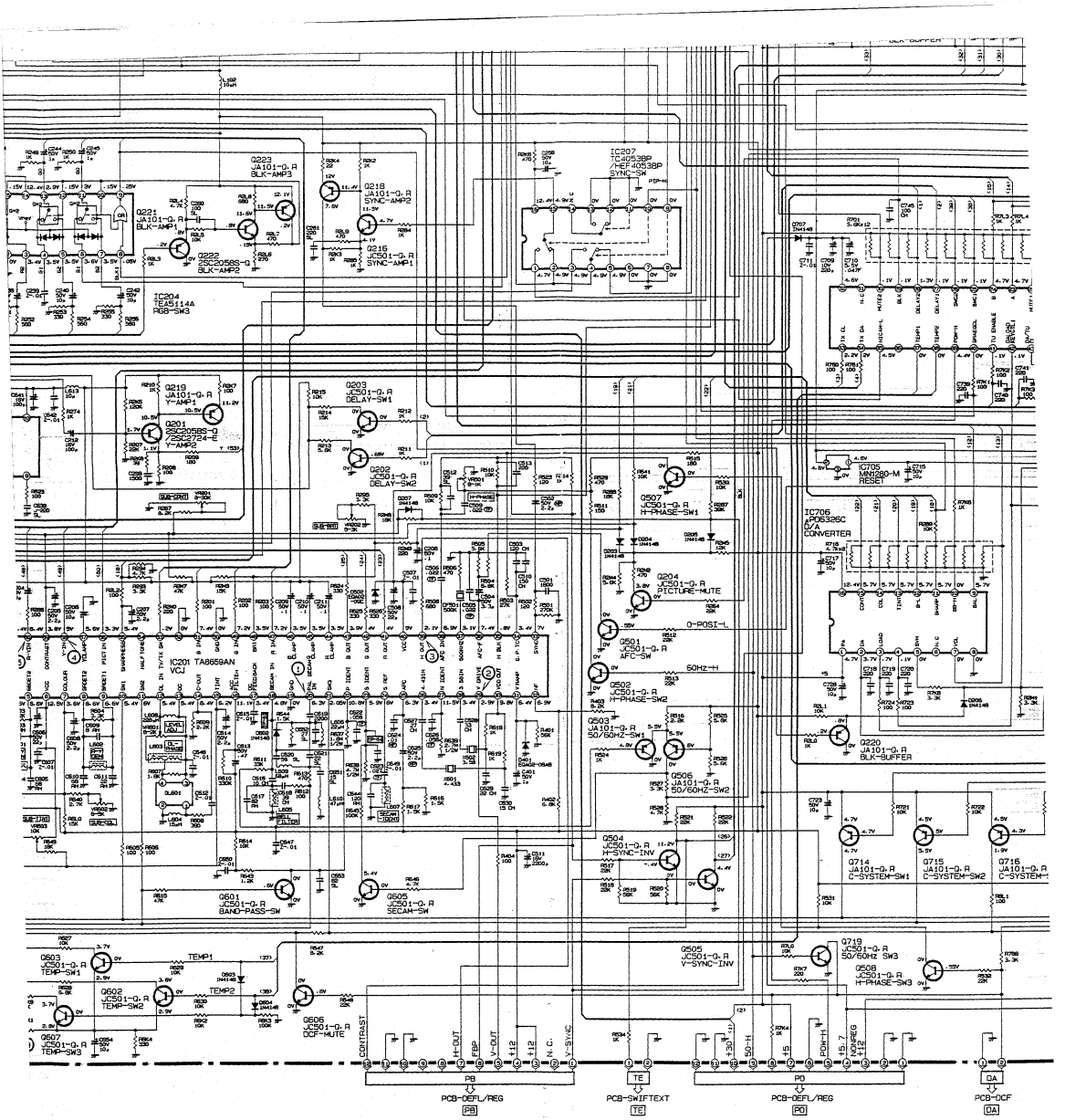
SPECIFIC SYMBOL

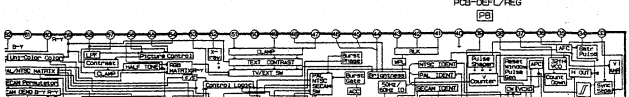
Zener Diode	Varistor
Varicap	Crystal unit
Posistor	Air Gap
Thermistor	Part (resistor) attached on the copper-foil side of PCB
Fusible Resistor	Ceramic filter

NOTE 2:

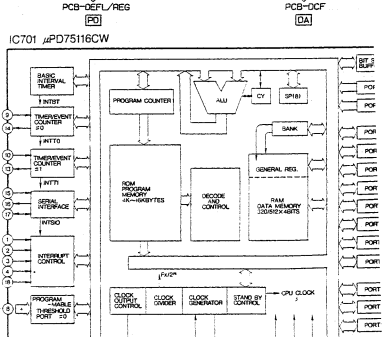
1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL colour bar signal.


Q101
JC501-Q.R
SENSE SW
Q217
JA101-Q.R
VIDEO-BUFFER
IC202
TEA5114A
RGB-SW1
IC203
TEA5114A
RGB-SW2
Q221
JA101-Q.R
BLK-AMP1
IC204
TEA5114A
RGB-SW3
Q211
JC501-Q.R
VIDEO-BUFFER2
Q213
JC501-Q.R
Y-BUFFER3
IC601
TDA4565
CT1
Q219
JA101-Q.R
Y-AMP1
Q201
2SC2058S
2SC2724
Y-AMP2
IC205
MC14551BCP
VIDEO-SW
Q207
JC501-Q.R
Y-AMP3
Q208
JA101-Q.R
Y-AMP4
IC201
TA8659AN
VCJ
Q209
JC501-Q.R
Y-BUFFER1
Q604
JC501-Q.R
C-BUFFER1
Q210
JA101-Q.R
Y-BUFFER2
Q608
JC501-Q.R
C-BUFFER2
Q503
JC501-Q.R
TEMP-SW1
Q502
JC501-Q.R
TEMP-SW2
Q507
JC501-Q.R
TEMP-SW3
N.C
R-OUT
GND
L-OUT
SWIT CHED
Y
SW-C1
SW-C2
VIDEO-OUT
CHROMA
+12
SYNC
PERI-1-H
PERI-2-H
B
G
R
BLK
SW3
SW2
SW1
FP
CC
CB
CT
PCB-PIP
PCB-VMCRT
IC601 TDA4565
THRESHOLD SWITCH
CLAMPING CIRCUIT
6X 90ns 3X 90ns 45ns
GYRATOR DELAY CELLS
DIFFERENTIATING STAGE
INTEGRATOR STAGE PULSEFORMER
SWITCHING AND STORAGE STAGE
CHASSIS WAVEFORMS
①0.2Vp-p(H)
②4Vp-p(V)
③5.2Vp-p(H)
④1Vp-p(H)
⑤0.9Vp-p(H)
⑧5Vp-p(H)
⑨4.8Vp-p(H)
⑩0.9Vp-p(H)
⑪1.9Vp-p(H)
⑫0.9Vp-p(H)





IC701 μPD75116CW



④1Vp-p(H)

⑤0.9Vp-p(H)

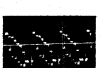
⑥0.7Vp-p(H)

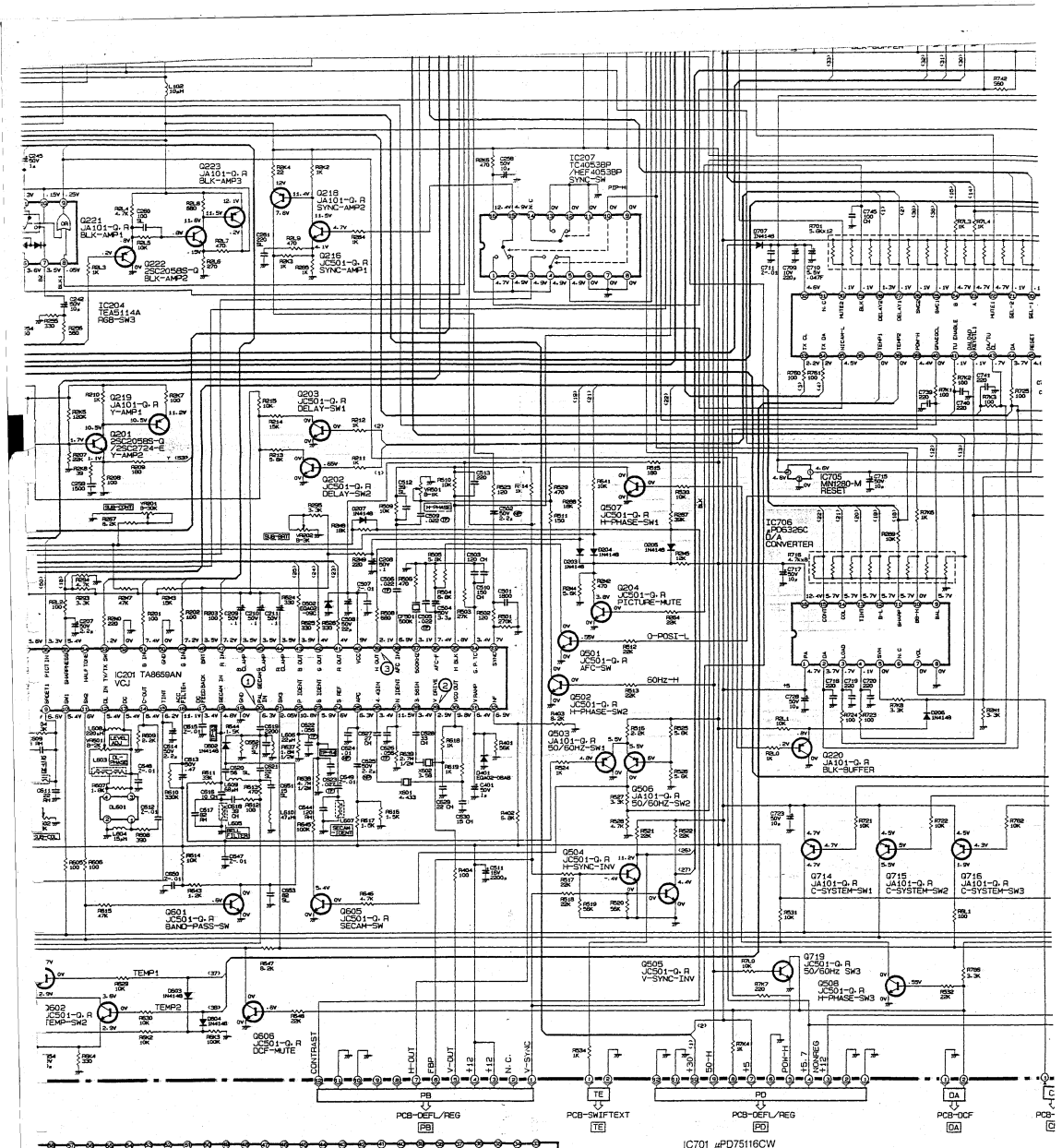
⑦5Vp-p(H)

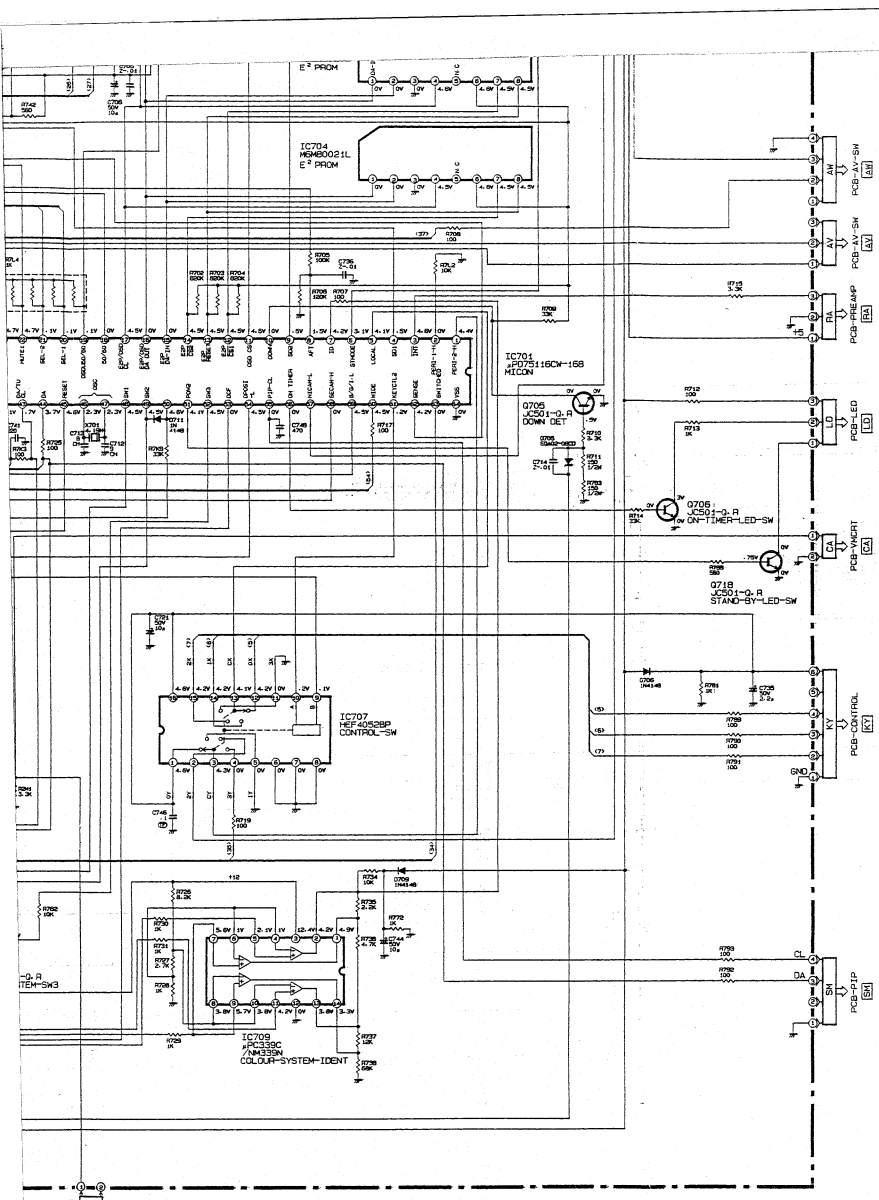
⑪1.9Vp-p(H)

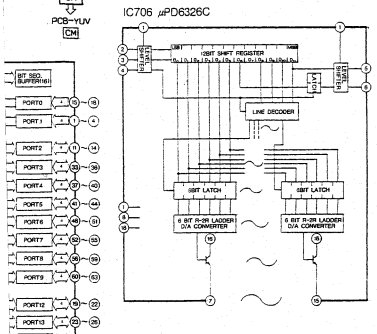
⑫0.9Vp-p(H)

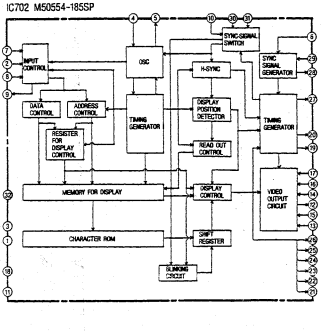
⑬0.9Vp-p(H)

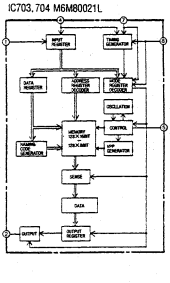

⑭0.9Vp-p(H)


Q223 JA101-Q,R BLK-AMP3
Q221 JA101-Q,R BLK-AMP1
Q222 2SC2058S-Q BLK-AMP2
Q218 JA101-Q,R SYNC-AMP2
Q216 JC501-Q,R SYNC-AMP1
IC207 TC40538P /HEF40538P SYNC-SW
IC204 TEA5114A RGB-SW3
Q219 JA101-Q,R Y-AMP1
Q201 2SC2058S-Q 2SK2724-E Y-AMP2
Q203 JC501-Q,R DELAY-SW1
Q202 JC501-Q,R DELAY-SW2
IC705 MN1280-M MICRO-RESET
IC706 PD6326C D/A CONVERTER
Q507 JC501-Q,R H-PHASE-SW1
Q204 JC501-Q,R PICTURE-MUTE
IC201 TA8658AN VCJ
Q501 JC501-Q,R AFC-SW
Q502 JC501-Q,R H-PHASE-SW2
Q503 JA101-Q,R 50/60HZ-SW1
Q506 JA101-Q,R 50/60HZ-SW2
Q220 JA101-Q,R BLK-BUFFER
Q504 JC501-Q,R H-SYNC-INV
Q714 JA101-Q,R C-SYSTEM-SW1
Q715 JA101-Q,R C-SYSTEM-SW2
Q716 JA101-Q,R C-SYSTEM-SW3
Q501 JC501-Q,R BAND-PASS-SW
Q505 JC501-Q,R V-SYNC-INV
Q719 JC501-Q,R 50/60HZ SW3
Q508 JC501-Q,R H-PHASE-SW3
TEMP1
TEMP2
J502 JC501-Q,R TEMP-SW2
Q506 JC501-Q,R DCF-MUTE
Q605 JC501-Q,R SECAM-SW
CONTRAST
H-OUT
FBP
V-OUT
+12
N.C.
V-SYNC
PB
PCB-OEFL/REG
TE
PCB-SWIFTEXT
PD
PCB-OEFL/REG
DA
PCB-DCF
IC701 μPD75116CW
⑤0.9Vp-p(H)
⑥0.7Vp-p(H)
⑦5Vp-p(H)
⑫0.9Vp-p(H)
⑬0.9Vp-p(H)
⑭0.9Vp-p(H)









NOTE 1:

1. The unit of resistance is "ohm" with no symbol. Accordingly, K = 1000 ohms, M = 1000K ohms.
2. The wattage of resistors, if not specifically design than 1/4 watt.
3. Resistors, if not specifically designated, are carbon re
4. The marks of resistors are as follows:
   - (CE) : Cemented resistor
   - (MB) : Metal oxide film resistor (type B)
   - (MPC) : Metel plate cement resistor.
   - (ML) : Metal linear resistor.
   - (S) : Fixed composition resistor
   - (W) : Wire wound resistor
   - (M) : Metal film resistor
5. The tolerance of resistor value, if not specifically desi ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated a) μF, for numbers less than 1 b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - (ALM) : Aluminus electrolytic capacitor
   - (MF) : Polyester capacitor
   - (PP) : Polypropylene film capacitor
   - (TANT) : Tantalum capacitor
   - (TF) : Twin film capacitor.
   - (MF.PP) : Polyester polypropylene film capacitor.
   - (MPP) : Metallize plastic film capacitor.
   - (NP) : Non polarized electrolytic capacitor.
   - (PS) : Styrol capacitor.
   - (SC) : Semi conductor capacitor.
   - (⫩) : Electrolytic capacitor
9. The DC working voltage of capacitor. if not specificall ed is: 50V
10. The tolerance of capacitor value, if not specifically des ±10% for polyester capacitor ±5% for ceramic capacitor and J = ±5% K= ±10% M = ±20% P = +100 0 C=±0.25PF D=±0.5PF F=±1PF Z=+80% -20%

SPECIFIC SYMBOL

Zener Diode		Varistor	
Varicap		Crystal unit	
Posistor		Air Gap	
Thermistor		Part (resistor) att on the copper-fo of PCB	
Fusible Resistor		Ceramic filter	

NOTE 2:

1. DC voltages were measured from points indicated to t ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL colour bar signal
3. This is a basic schematic diagram. Some sets may be s modification according to engineering improvement.

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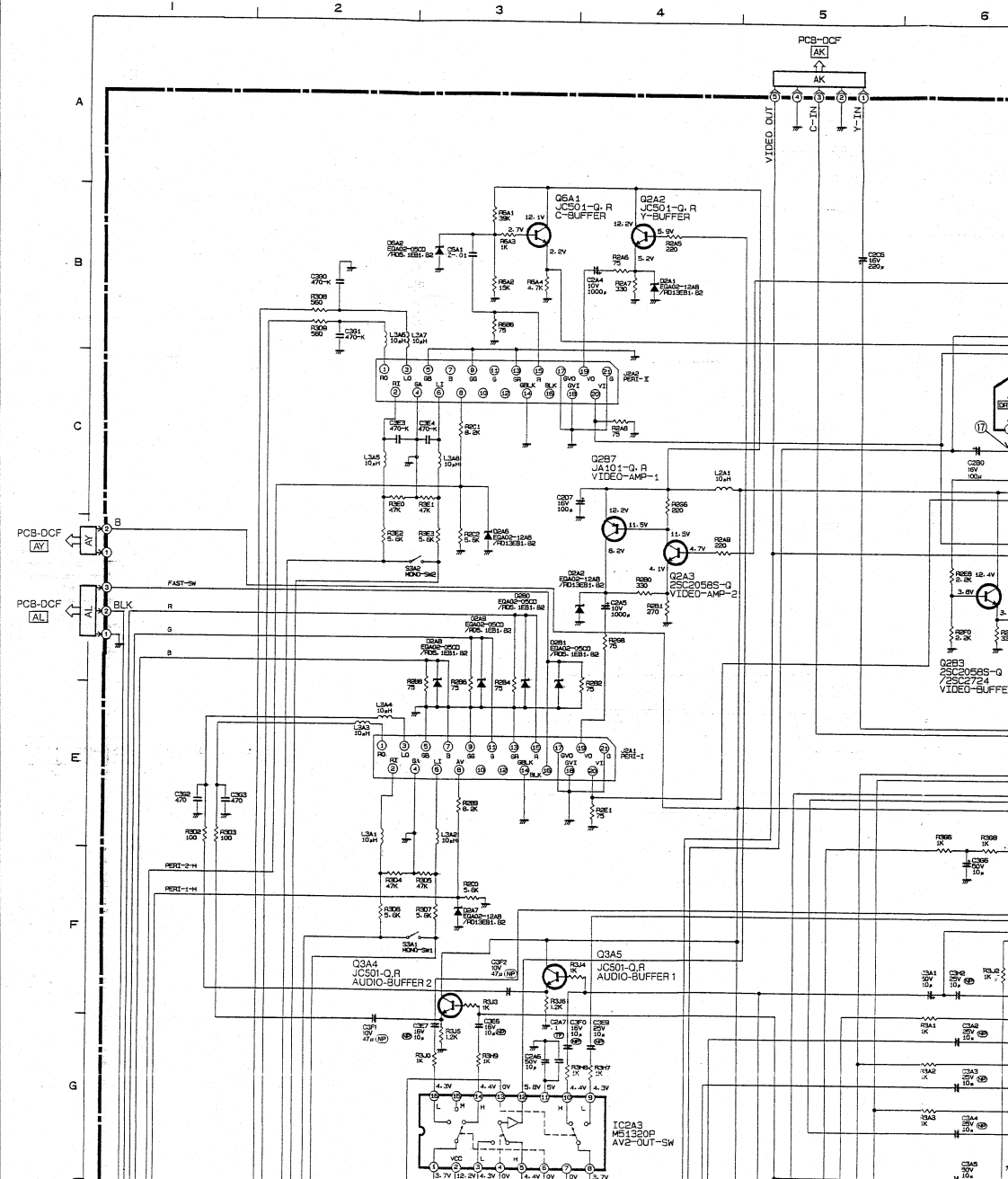
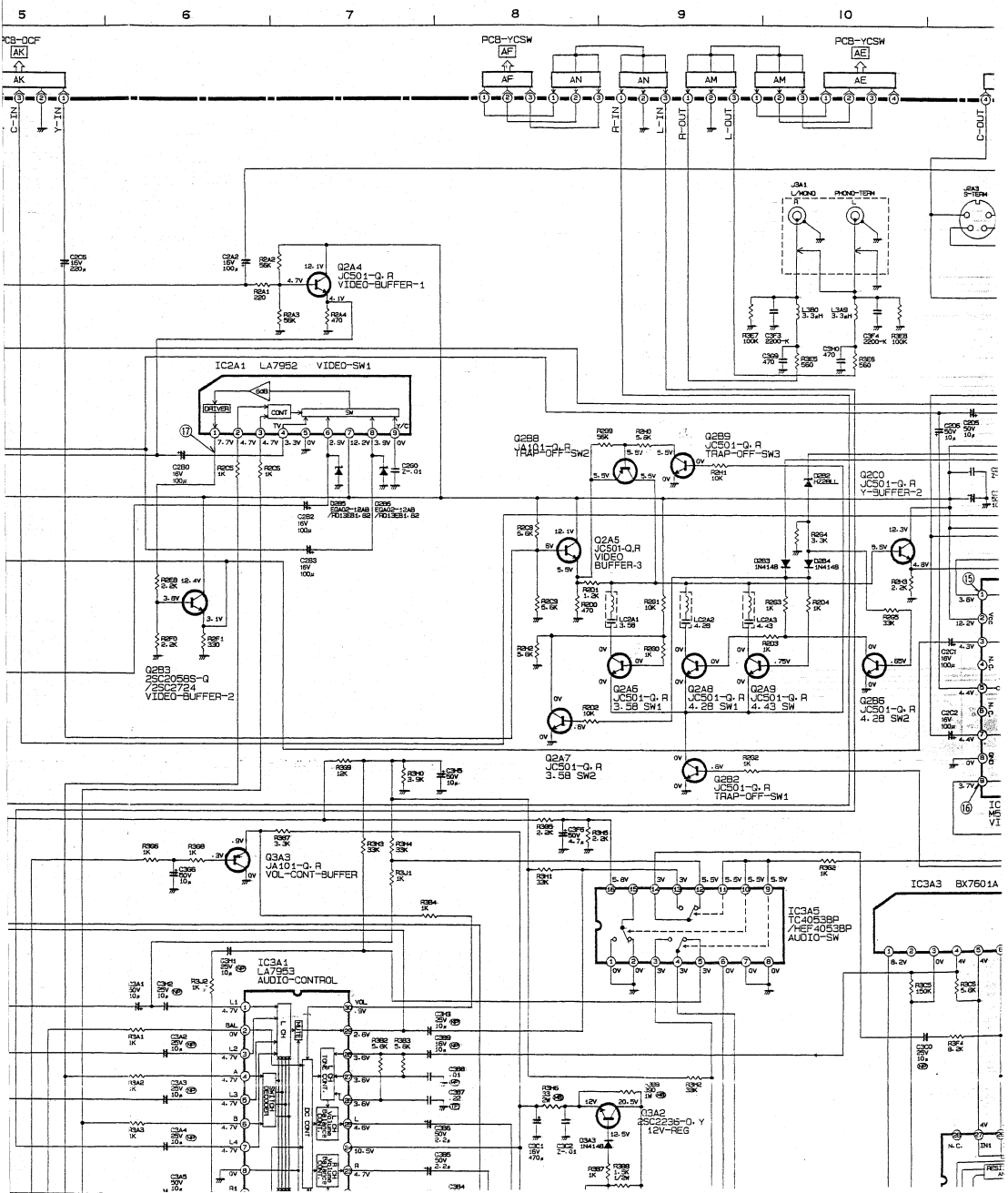
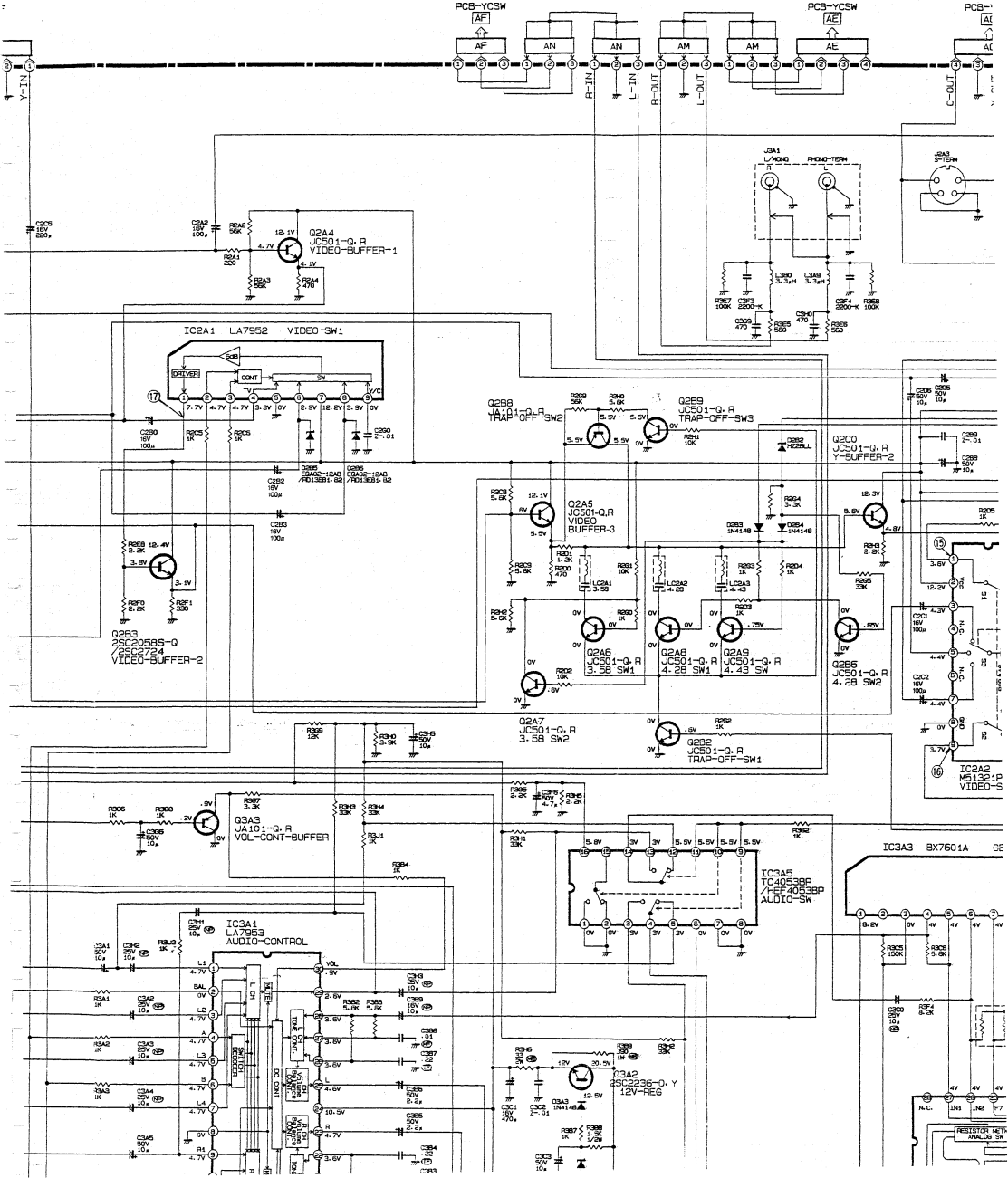
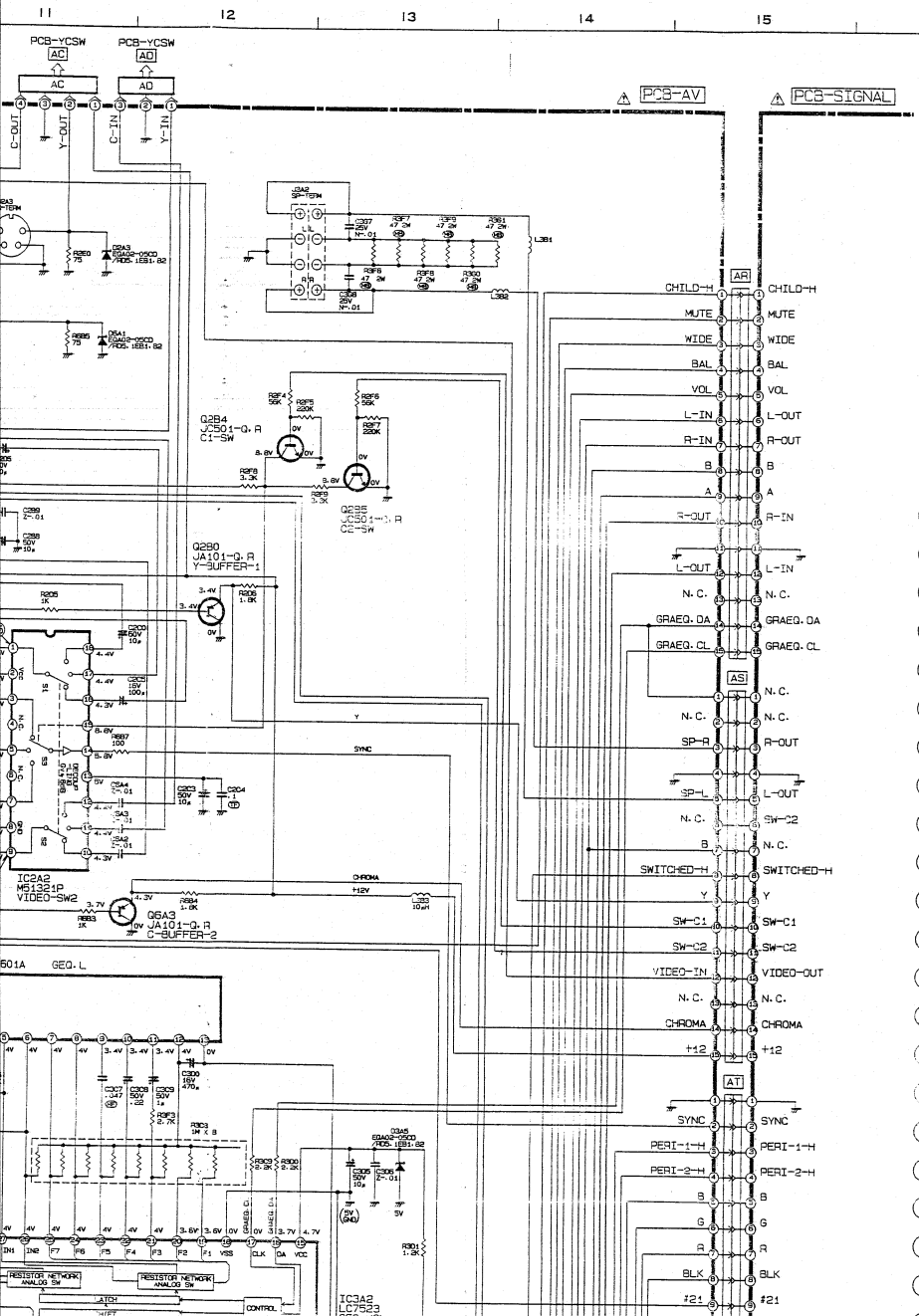
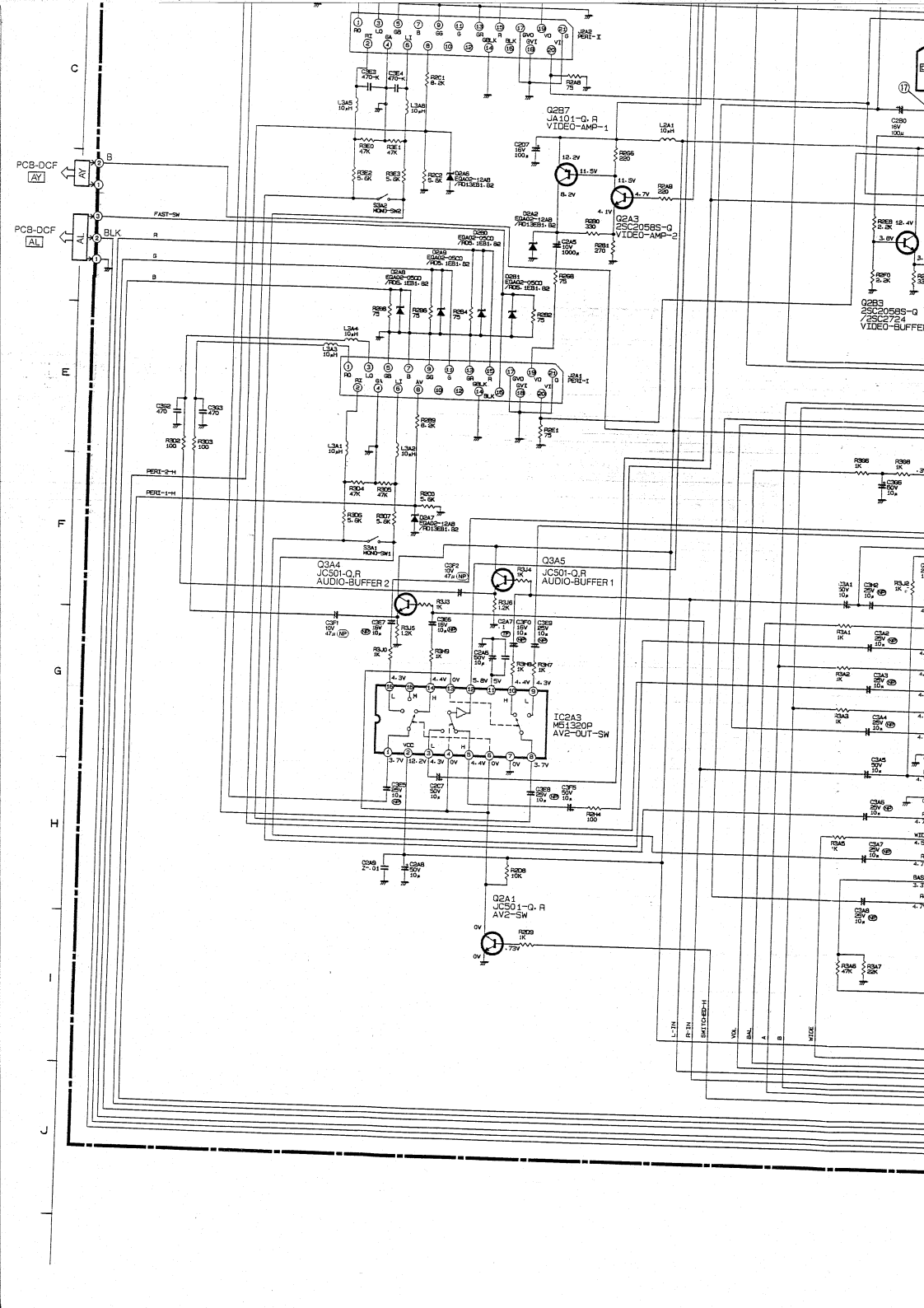
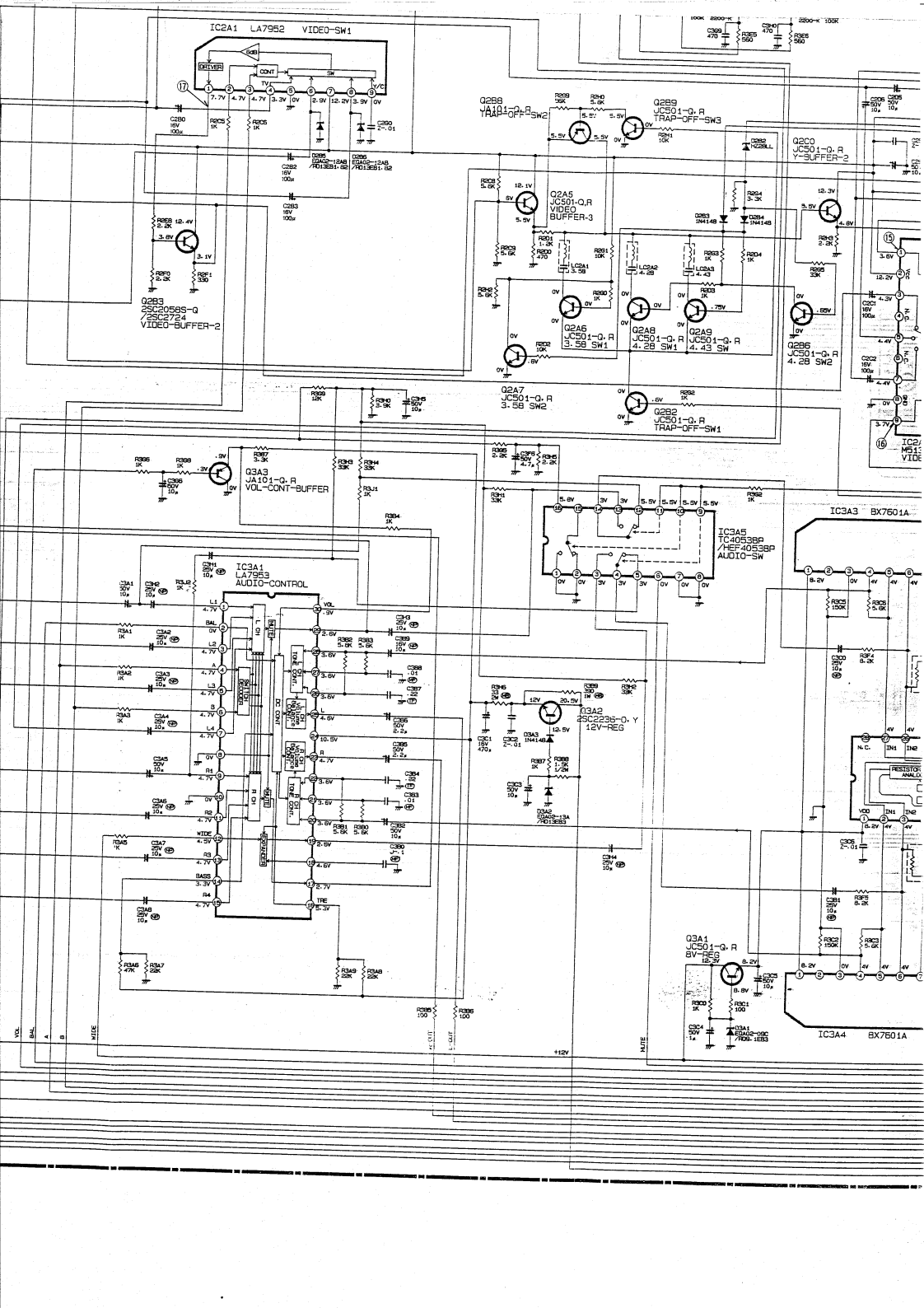

PCB-DCF
AK
VIDEO OUT
C-IN
Y-IN
Q6A1
JC501-Q.R
C-BUFFER
Q2A2
JC501-Q.R
Y-BUFFER
Q2B7
JA101-Q.R
VIDEO-AMP-1
Q2A3
2SC2058S-Q
VIDEO-AMP-2
Q2B3
2SC2058S-Q
/2SC2724
VIDEO-BUFFE
PCB-DCF
AY
PCB-DCF
AL
BLK
FAST-SW
PERI-2-H
PERI-1-H
Q3A4
JC501-Q.R
AUDIO-BUFFER 2
Q3A5
JC501-Q.R
AUDIO-BUFFER 1
IC2A3
M51320P
AV2-OUT-SW

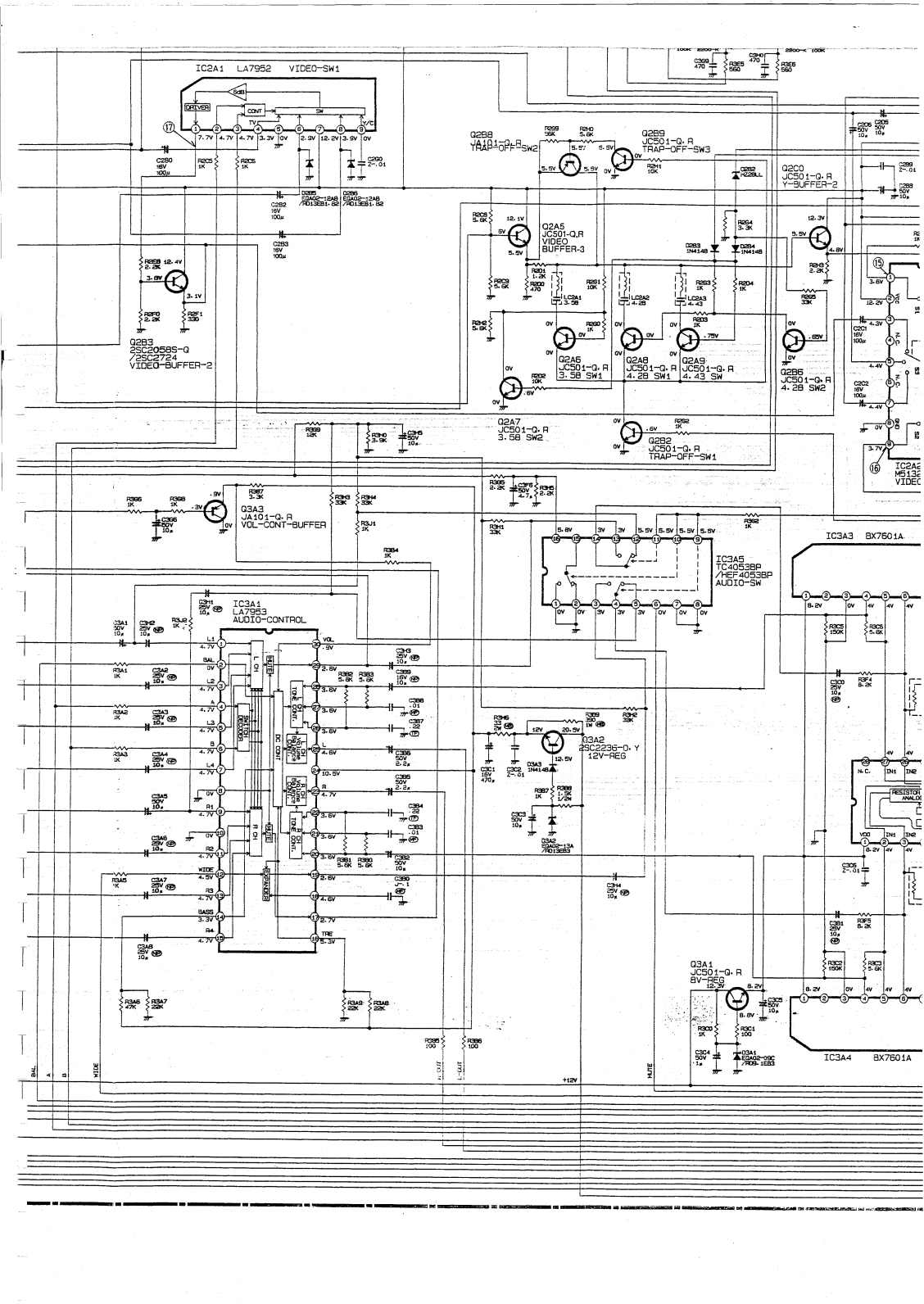

5
6
7
8
9
10
PCB-OCF
PCB-YCSW
PCB-YCSW
C-IN
Y-IN
A-IN
L-IN
R-OUT
L-OUT
C-OUT
IC2A1 LA7952 VIDEO-SW1
Q2A4 JC501-Q.R VIDEO-BUFFER-1
Q2B3 2SC2058S-Q /2SC2724 VIDEO-BUFFER-2
Q2B8 JA101-Q.R TRAP-OFF-SW2
Q2B9 JC501-Q.R TRAP-OFF-SW3
Q2A5 JC501-Q.R VIDEO BUFFER-3
Q2C0 JC501-Q.R Y-BUFFER-2
Q2A6 JC501-Q.R 3.58 SW1
Q2A8 JC501-Q.R 4.28 SW1
Q2A9 JC501-Q.R 4.43 SW
Q2B5 JC501-Q.R 4.28 SW2
Q2A7 JC501-Q.R 3.58 SW2
Q2B2 JC501-Q.R TRAP-OFF-SW1
Q3A3 JA101-Q.R VOL-CONT-BUFFER
IC3A1 LA7953 AUDIO-CONTROL
IC3A5 TC4053BP /HEF4053BP AUDIO-SW
IC3A3 BX7601A
Q3A2 2SC2236-Q, Y 12V-REG

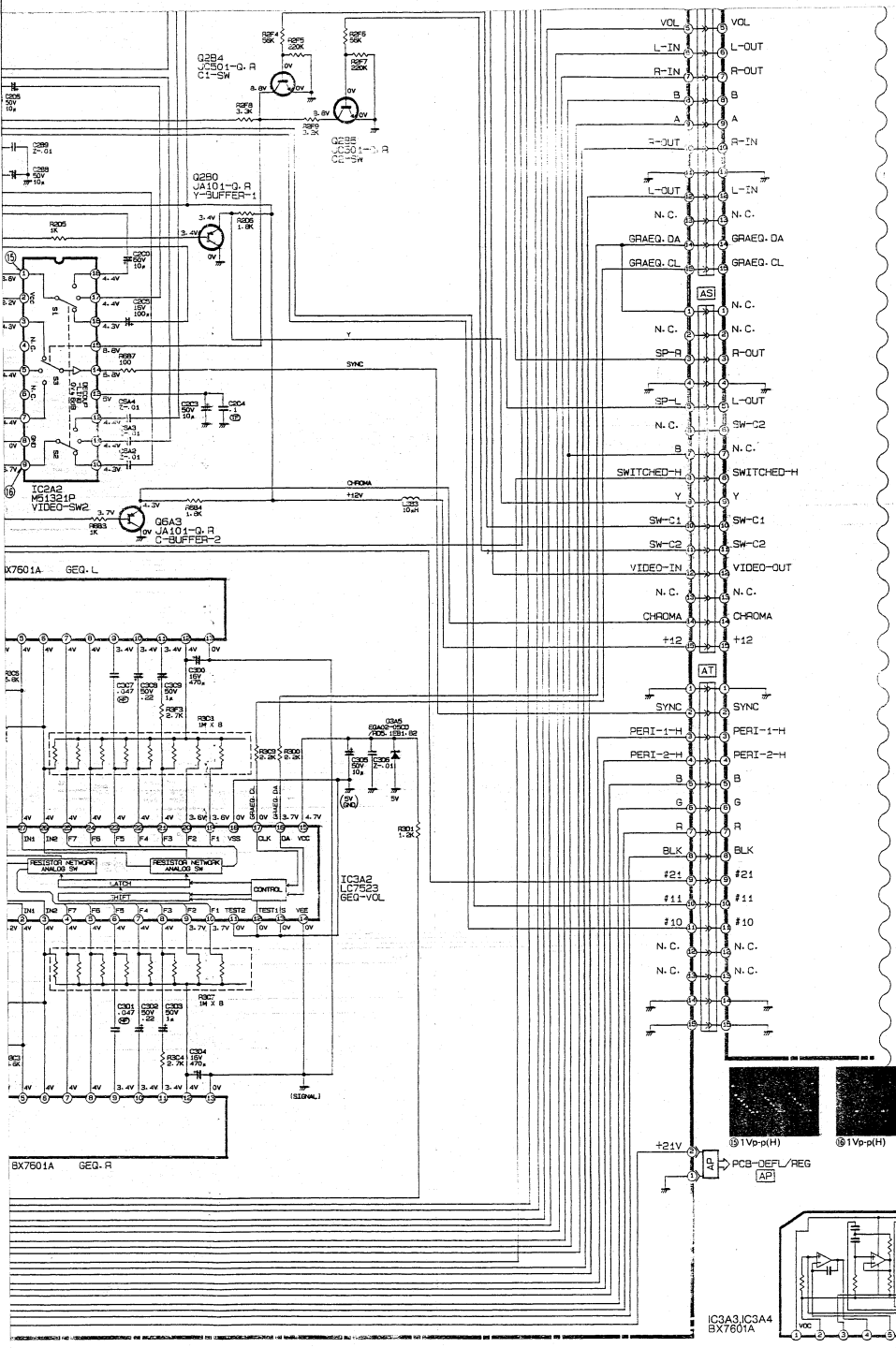

6
7
8
9
10
11
PCB-YCSW
AF
AN
AM
AE
Y-IN
R-IN
L-IN
R-OUT
L-OUT
C-OUT
J3A1
L-MONO
PHONO-TERM
J2A3
S-TERM
IC2A1 LA7952 VIDEO-SW1
Q2A4
JC501-Q.R
VIDEO-BUFFER-1
Q2B8
YA101-Q.R
Q2B9
JC501-Q.R
TRAP-OFF-SW3
Q2C0
JC501-Q.R
Y-BUFFER-2
Q2A5
JC501-Q.R
VIDEO
BUFFER-3
Q2B3
2SC2058S-Q
/2SC2724
VIDEO-BUFFER-2
Q2A5
JC501-Q.R
3.58 SW1
Q2A8
JC501-Q.R
4.28 SW1
Q2A9
JC501-Q.R
4.43 SW
Q2B6
JC501-Q.R
4.28 SW2
Q2A7
JC501-Q.R
3.58 SW2
Q2B2
JC501-Q.R
TRAP-OFF-SW1
IC2A2
MS1321P
VIDEO-S
Q3A3
JA101-Q.R
VOL-CONT-BUFFER
IC3A1
LA7953
AUDIO-CONTROL
IC3A5
TC40S388P
/HEF40538BP
AUDIO-SW
IC3A3 BX7601A
Q3A2
2SC2236-O.Y
12V-REG

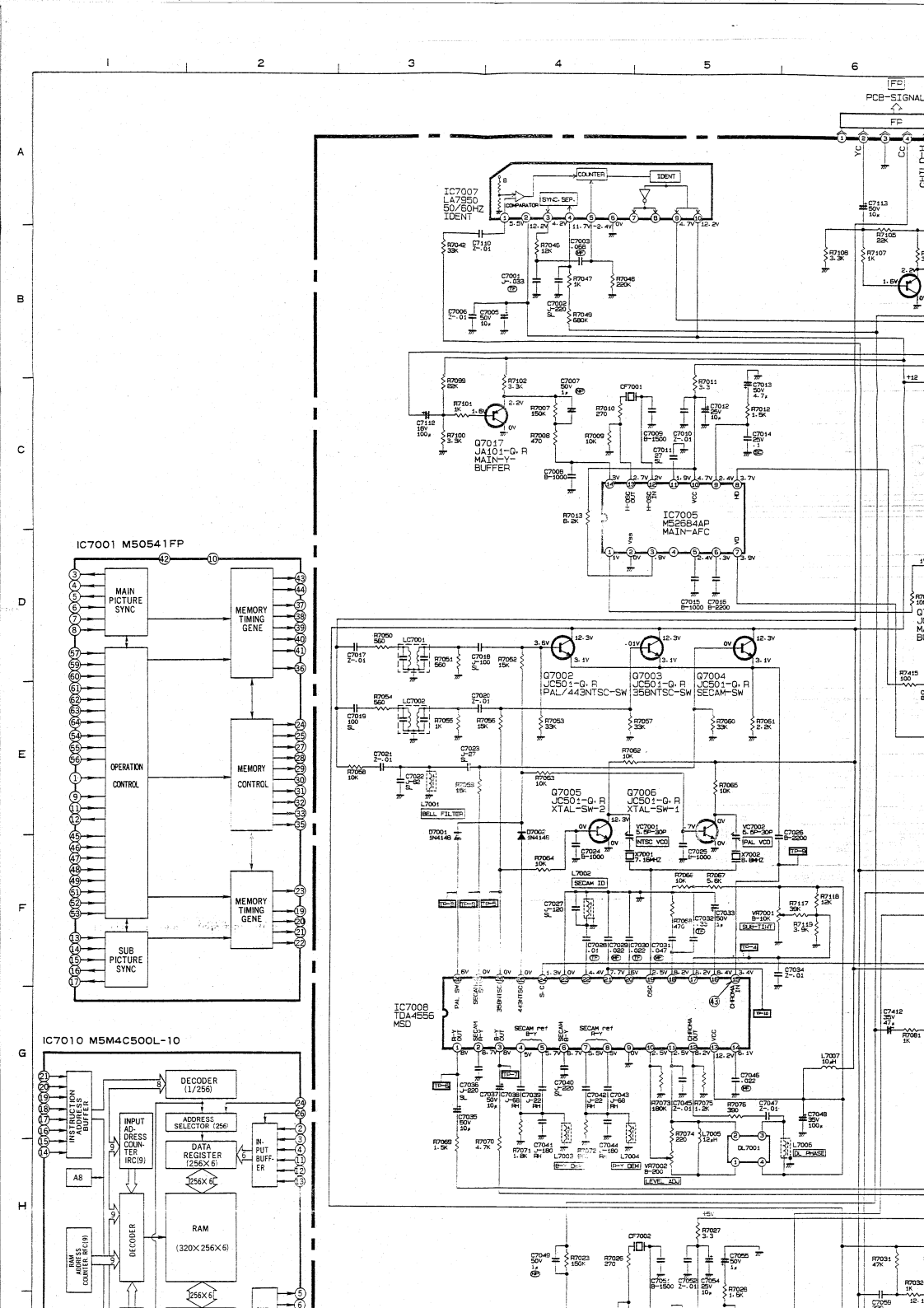

11
12
13
14
15
16
PCB-YCSW
AC
AD
C-OUT
Y-OUT
C-IN
Y-IN
PCB-AV
PCB-SIGNAL
CHILD-H
MUTE
WIDE
BAL
VOL
L-IN
R-IN
B
A
R-OUT
L-OUT
N. C.
GRAEQ. DA
GRAEQ. CL
SP-R
SP-L
SW-C2
SWITCHED-H
Y
SW-C1
VIDEO-IN
CHROMA
+12
SYNC
PERI-1-H
PERI-2-H
G
R
BLK
#21
Q2B4
2SD1-Q.R
C1-SW
Q2B5
2SD1-Q.R
C2-SW
Q2B0
JA101-Q.R
Y-BUFFER-1
Q5A3
JA101-Q.R
C-BUFFER-2
IC2A2
M51321P
VIDEO-SW2
IC3A2
LC7523
GEQ.L
SYNC
CHROMA
RESISTOR NETWORK
ANALOG SW
CONTROL
LATCH

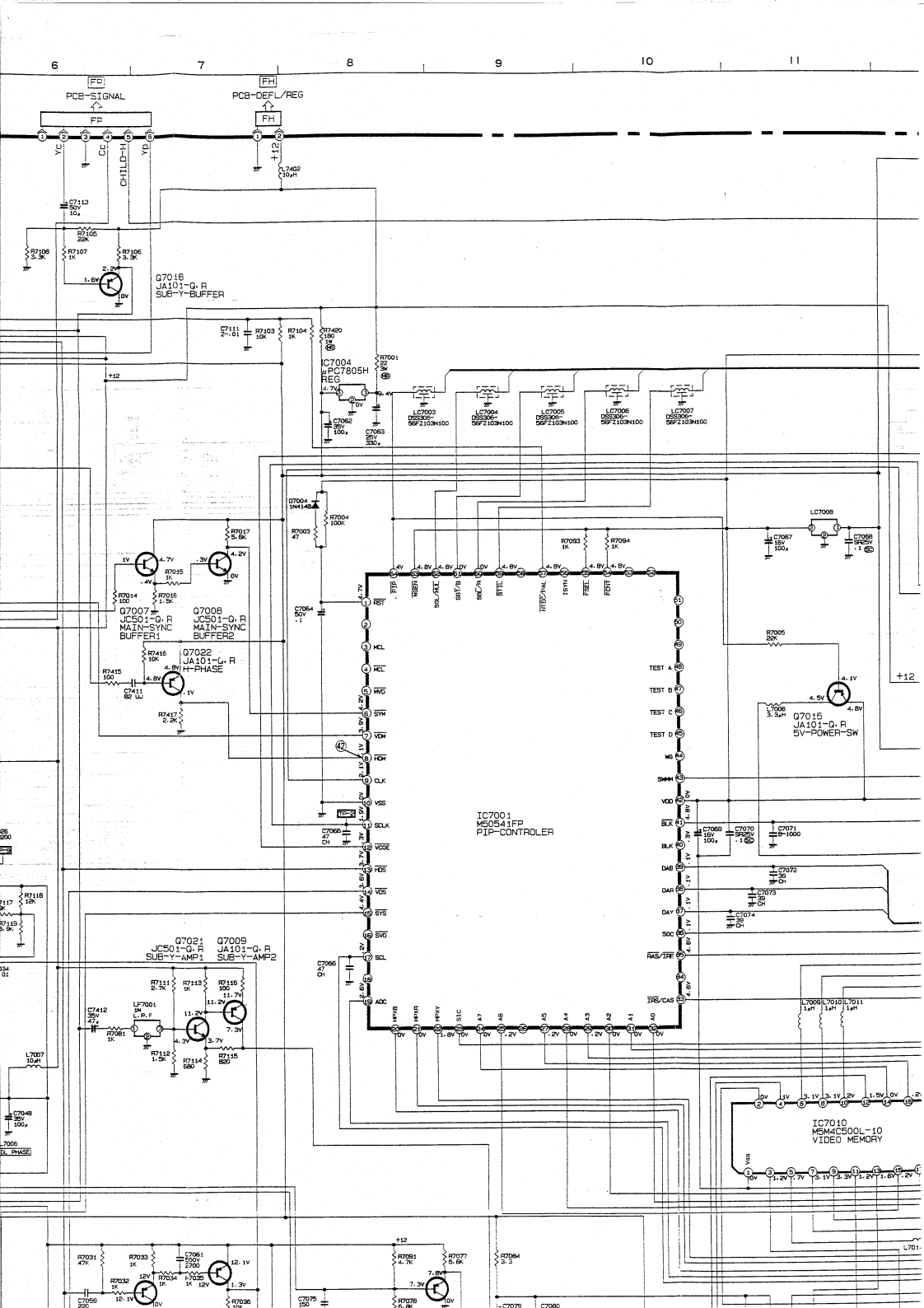

PCB-DCF
AV
PCB-DCF
AL
FAST-SW
BLK
R
G
B
PERI-2-H
PERI-1-H
Q2B7
JA101-Q,R
VIDEO-AMP-1
Q2A3
2SC2058S-Q
VIDEO-AMP-2
Q2B3
2SC2058S-Q
2SC2724
VIDEO-BUFFE
Q3A4
JC501-Q,R
AUDIO-BUFFER 2
Q3A5
JC501-Q,R
AUDIO-BUFFER 1
IC2A3
M51320P
AV2-OUT-SW
Q2A1
JC501-Q,R
AV2-SW
L-IN
R-IN
SWITCHED-H
VOL
BAL
A
B
MODE

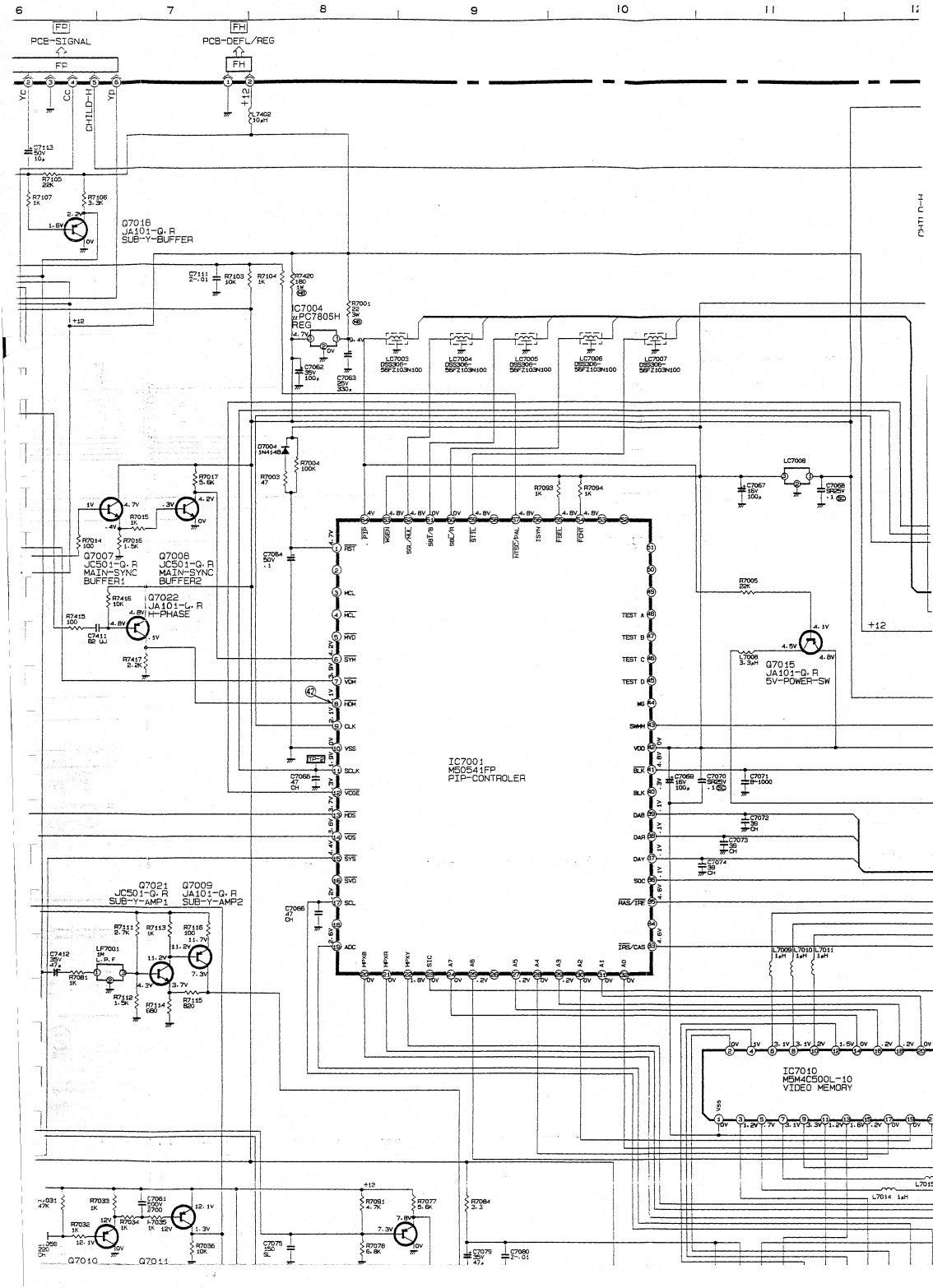

IC2A1 LA7952 VIDEO-SW1
Q2B8 YA101-Q,R TRAP-OFF-SW2
Q2B9 JC501-Q,R TRAP-OFF-SW3
Q2C0 JC501-Q,R Y-BUFFER-2
Q2A5 JC501-Q,R VIDEO BUFFER-3
Q2A6 JC501-Q,R 3.58 SW1
Q2A8 JC501-Q,R 4.28 SW1
Q2A9 JC501-Q,R 4.43 SW
Q2B6 JC501-Q,R 4.28 SW2
Q2A7 JC501-Q,R 3.58 SW2
Q2B2 JC501-Q,R TRAP-OFF-SW1
Q2B3 2SC2058S-Q /2SC2724 VIDEO-BUFFER-2
Q3A3 JA101-Q,R VOL-CONT-BUFFER
IC3A1 LA7953 AUDIO-CONTROL
IC3A5 TC40438P /HEF40538P AUDIO-SW
Q3A2 2SC2236-Q,Y 12V-REG
Q3A1 JC501-Q,R 8V-REG
IC3A3 BX7601A
IC3A4 BX7601A
+12V
MUTE

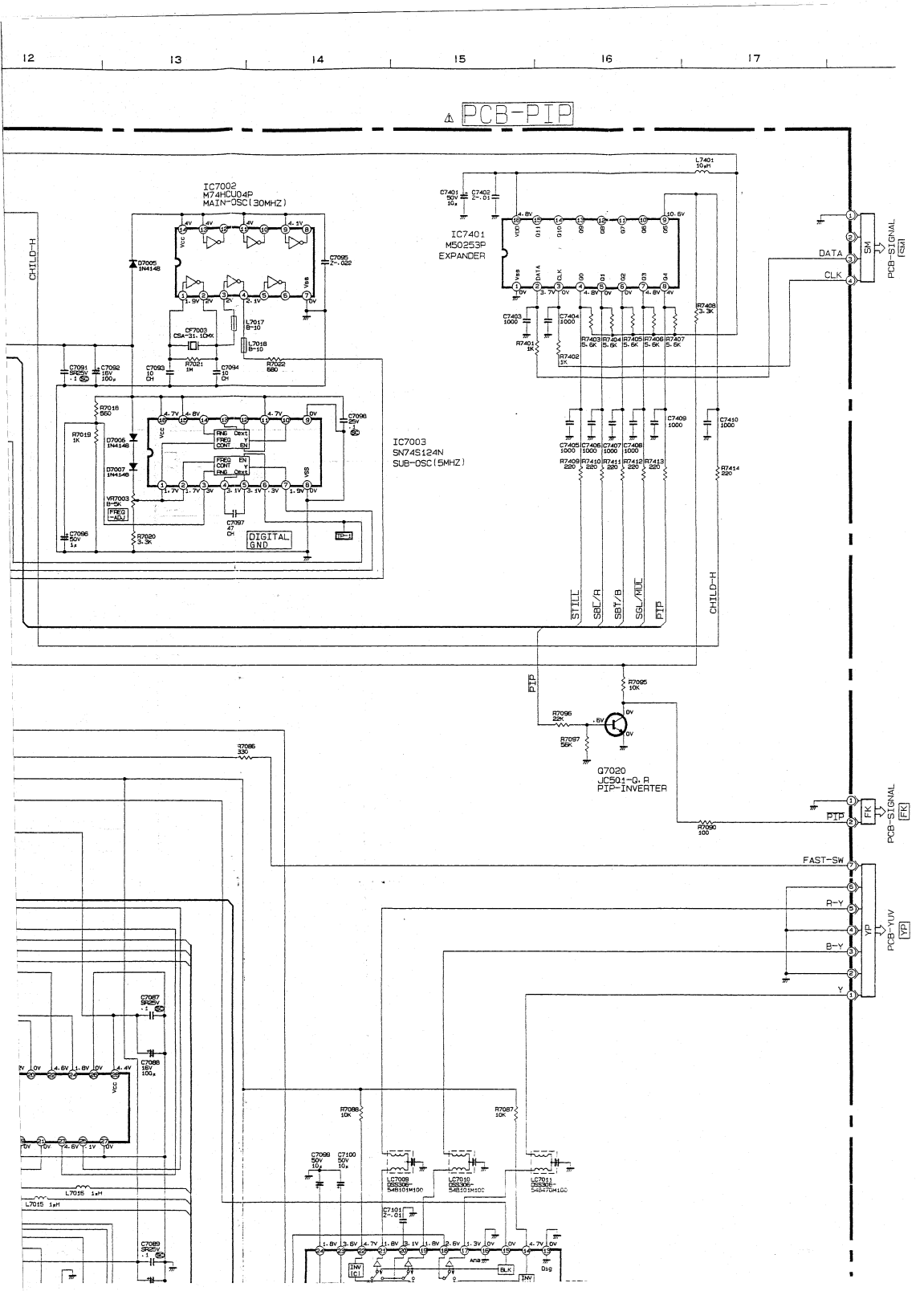

IC2A1 LA7952 VIDEO-SW1
DRIVER
CONT
SW
TV
V/C
Q2B8 JA101-Q.R TRAP-OFF-SW2
Q2B9 JC501-Q.R TRAP-OFF-SW3
Q2C0 JC501-Q.R Y-BUFFER-2
Q2A5 JC501-Q.R VIDEO BUFFER-3
Q2B3 2SC2058S-Q /2SC2724 VIDEO-BUFFER-2
Q2A6 JC501-Q.R 3.58 SW1
Q2A8 JC501-Q.R 4.28 SW1
Q2A9 JC501-Q.R 4.43 SW
Q2B6 JC501-Q.R 4.28 SW2
Q2A7 JC501-Q.R 3.58 SW2
Q2B2 JC501-Q.R TRAP-OFF-SW1
Q3A3 JA101-Q.R VOL-CONT-BUFFER
IC3A1 LA7953 AUDIO-CONTROL
IC3A5 TC40538P /HEF40538P AUDIO-SW
IC3A3 BX7601A
Q3A2 2SC2236-O.Y 12V-REG
Q3A1 JC501-Q.R 8V-REG
IC3A4 BX7601A
+12V
MUTE

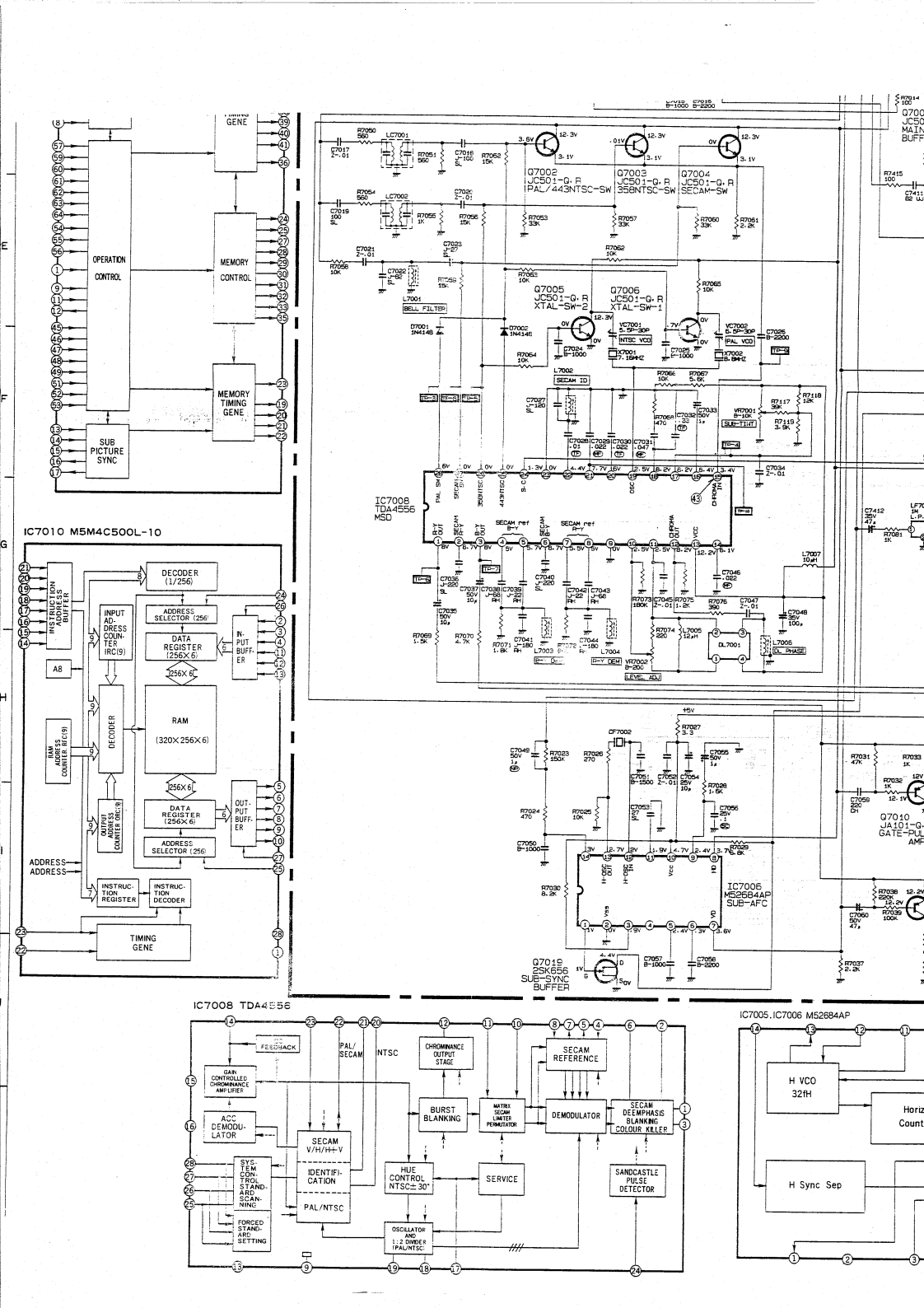

Q2B4
JC501-Q.R
C1-SW
Q2B5
JC301-Q.R
C2-SW
Q2B0
JA101-Q.R
Y-BUFFER-1
IC2A2
MB1321P
VIDEO-SW2
Q6A3
JA101-Q.R
C-BUFFER-2
BX7601A GEQ.L
BX7601A GEQ.R
IC3A2
LC7523
GEQ-VOL
RESISTOR NETWORK ANALOG SW
LATCH
SHIFT
CONTROL
VOL
L-IN
R-IN
B
A
R-OUT
L-OUT
N.C.
GRAEQ.DA
GRAEQ.CL
SP-R
SP-L
SW-C2
SWITCHED-H
Y
SW-C1
VIDEO-IN
VIDEO-OUT
CHROMA
+12
SYNC
PERI-1-H
PERI-2-H
B
G
R
BLK
#21
#11
#10
+21V
PCB-DEFL/REG
AP
⑨1Vp-p(H)
⑯1Vp-p(H)
⑰1.8Vp-p(H)
IC3A3,IC3A4
BX7601A


IC7001 M50541FP
MAIN PICTURE SYNC
MEMORY TIMING GENE
OPERATION CONTROL
MEMORY CONTROL
MEMORY TIMING GENE
SUB PICTURE SYNC
IC7010 M5M4C500L-10
INSTRUCTION DECODER BUFFER
DECODER (1/256)
INPUT AD-DRESS COUN-TER IRC(9)
ADDRESS SELECTOR (256)
DATA REGISTER (256X6)
INPUT BUFFER
256X6
A8
RAM (320X256X6)
DECODER
RAM ADDRESS COUNTER, REG.(9)
IC7007 LA7950 50/60HZ IDENT
COUNTER
IDENT
SYNC. SEP.
COMPARATOR
Q7017 JA101-Q, R MAIN-V-BUFFER
IC7005 M52684AP MAIN-AFC
Q7002 JC501-Q, R PAL/443NTSC-SW
Q7003 JC501-Q, R 358NTSC-SW
Q7004 JC501-Q, R SECAM-SW
Q7005 JC501-Q, R XTAL-SW-2
Q7006 JC501-Q, R XTAL-SW-1
BELL FILTER
NTSC VCO
PAL VCO
SECAM ID
IC7008 TDA4556 MSD
PCB-SIGNAL
FP


6
7
8
9
10
11
FP
PCB-SIGNAL
FH
PCB-DEFL/REG
YC
CC
CHLD-H
YD
+12
L7402
10μH
C7113
50V
10μ
R7105
22K
R7108
3.3K
R7107
1K
R7106
3.3K
Q7018
JA101-Q,R
SUB-Y-BUFFER
C7111
2.01
R7103
10K
R7104
1K
R7420
180
1W
R7001
82
5W
IC7004
μPC7805H
REG
C7062
35V
100μ
C7063
25V
330μ
LC7003
DSS306-
56F2103N100
LC7004
DSS306-
56F2103N100
LC7005
DSS306-
56F2103N100
LC7006
DSS306-
56F2103N100
LC7007
DSS306-
56F2103N100
D7004
1N4148
R7004
100K
R7003
47
R7017
5.6K
R7015
1K
R7014
100
R7016
1.5K
Q7007
JC501-Q,R
MAIN-SYNC
BUFFER1
Q7008
JC501-Q,R
MAIN-SYNC
BUFFER2
R7416
10K
R7415
100
C7411
62
Q7022
JA101-C,R
H-PHASE
R7417
2.2K
C7064
50V
.1
R7093
1K
R7094
1K
C7067
16V
100μ
LC7008
C7068
50V
.1
R7005
22K
L7008
3.3μH
Q7015
JA101-Q,R
5V-POWER-SW
+12
IC7001
M50541FP
PIP-CONTROLER
C7066
47
CH
C7069
16V
100μ
C7070
50V
.1
C7071
B-1000
C7072
CH
C7073
CH
C7074
CH
Q7021
JC501-Q,R
SUB-Y-AMP1
Q7009
JA101-Q,R
SUB-Y-AMP2
R7111
2.7K
R7113
1K
R7116
100
R7081
1K
R7112
1.5K
R7114
680
R7115
680
C7412
35V
47μ
LF7001
1H
L.P.F
L7007
10μH
C7048
50V
100μ
L7009
1μH
L7010
1μH
L7011
1μH
IC7010
M5M4C500L-10
VIDEO MEMORY
R7031
47K
R7033
1K
R7032
1K
R7034
1K
R7035
1K
C7061
500V
2700
C7076
220
C7075
150
R7036
R7091
4.7K
R7078
R7077
5.6K
R7084
3.3
C7079
C7080


PCB-SIGNAL
PCB-DEFL/REG
Q7016 JA101-Q.R SUB-Y-BUFFER
IC7004 μPC7805H REG
Q7007 JC501-Q.R MAIN-SYNC BUFFER1
Q7008 JC501-Q.R MAIN-SYNC BUFFER2
Q7022 JA101-Q.R H-PHASE
IC7001 M50541FP PIP-CONTROLER
Q7015 JA101-Q.R 5V-POWER-SW
Q7021 JC501-Q.R SUB-Y-AMP1
Q7009 JA101-Q.R SUB-Y-AMP2
IC7010 M5M4C500L-10 VIDEO MEMORY
Q7010
Q7011


12
13
14
15
16
17
PCB-PIP
IC7002
M74HCU04P
MAIN-OSC(30MHZ)
IC7401
M50253P
EXPANDER
IC7003
SN74S124N
SUB-OSC(5MHZ)
CH1LD-H
DIGITAL GND
DATA
CLK
PCB-SIGNAL [SM]
PTP
PCB-SIGNAL [FK]
FAST-SW
R-Y
B-Y
Y
PCB-YUV [YP]
STBL
SBC/A
SBT/B
SGL/MUT
Q7020
JC501-Q.P
PIP-INVERTER


OPERATION CONTROL
MEMORY CONTROL
MEMORY TIMING GENE
SUB PICTURE SYNC
IC7010 M5M4C500L-10
DECODER (1/256)
ADDRESS SELECTOR (256)
DATA REGISTER (256X6)
RAM (320X256X6)
INSTRUCTION REGISTER
INSTRUCTION DECODER
TIMING GENE
IC7008 TDA4556 MSD
Q7002 JC501-Q,R PAL/443NTSC-SW
Q7003 JC501-Q,R 358NTSC-SW
Q7004 JC501-Q,R SECAM-SW
Q7005 JC501-Q,R XTAL-SW-2
Q7006 JC501-Q,R XTAL-SW-1
IC7006 M52684AP SUB-AFC
Q7010 JA101-Q GATE-PULSE AMP
Q7016 2SK656 SUB-SYNC BUFFER
IC7008 TDA4556
FEEDBACK
GAIN CONTROLLED CHROMINANCE AMPLIFIER
ACC DEMODULATOR
SYSTEM CONTROL STANDARD SCANNING
FORCED STANDARD SETTING
SECAM V/H/+V
IDENTIFICATION
PAL/NTSC
HUE CONTROL NTSC±30°
OSCILLATOR AND 1:2 DIVIDER (PAL/NTSC)
BURST BLANKING
CHROMINANCE OUTPUT STAGE
MATRIX SECAM LIMITER PERMUTATOR
SECAM REFERENCE
DEMODULATOR
SECAM DEEMPHASIS BLANKING COLOUR KILLER
SERVICE
SANDCASTLE PULSE DETECTOR
PAL/SECAM
NTSC
IC7005.IC7006 M52684AP
H VCO 32fH
H Sync Sep

Q7007
JC501-Q.R
MAIN-SYNC
BUFFER1

Q7008
JC501-Q.R
MAIN-SYNC
BUFFER2

Q7022
JA101-Q.R
H-PHASE

IC7001
M50541FP
PIP-CONTROLER

Q7015
JA101-Q.R
5V-POWER-SW

Q7021
JC501-Q.R
SUB-Y-AMP1

Q7009
JA101-Q.R
SUB-Y-AMP2

IC7010
M5M4C500L-10
VIDEO MEMORY

Q7010
JA101-Q.R
GATE-PULSE
AMP-1

Q7011
JA101-Q.R
GATE-PULSE
AMP-2

Q7013
JA101-Q.R
.6M L.P.F
R-Y BUFFER

Q7014
JA101-Q.R
.6M L.P.F
B-Y BUFFER

IC7009
M52686P
A/D-CONVERTER

Q7012
JA101-Q.R
VD-INVERTER

Q7001
JC501-Q.R
A/D BLACK-LEVEL
COMPENSATION

006 M52684AP

H VCO
32fH

AFC

Horizontal
Count Down

H Sync Sep

V Sync Sep

43 0.2Vp-p(H)

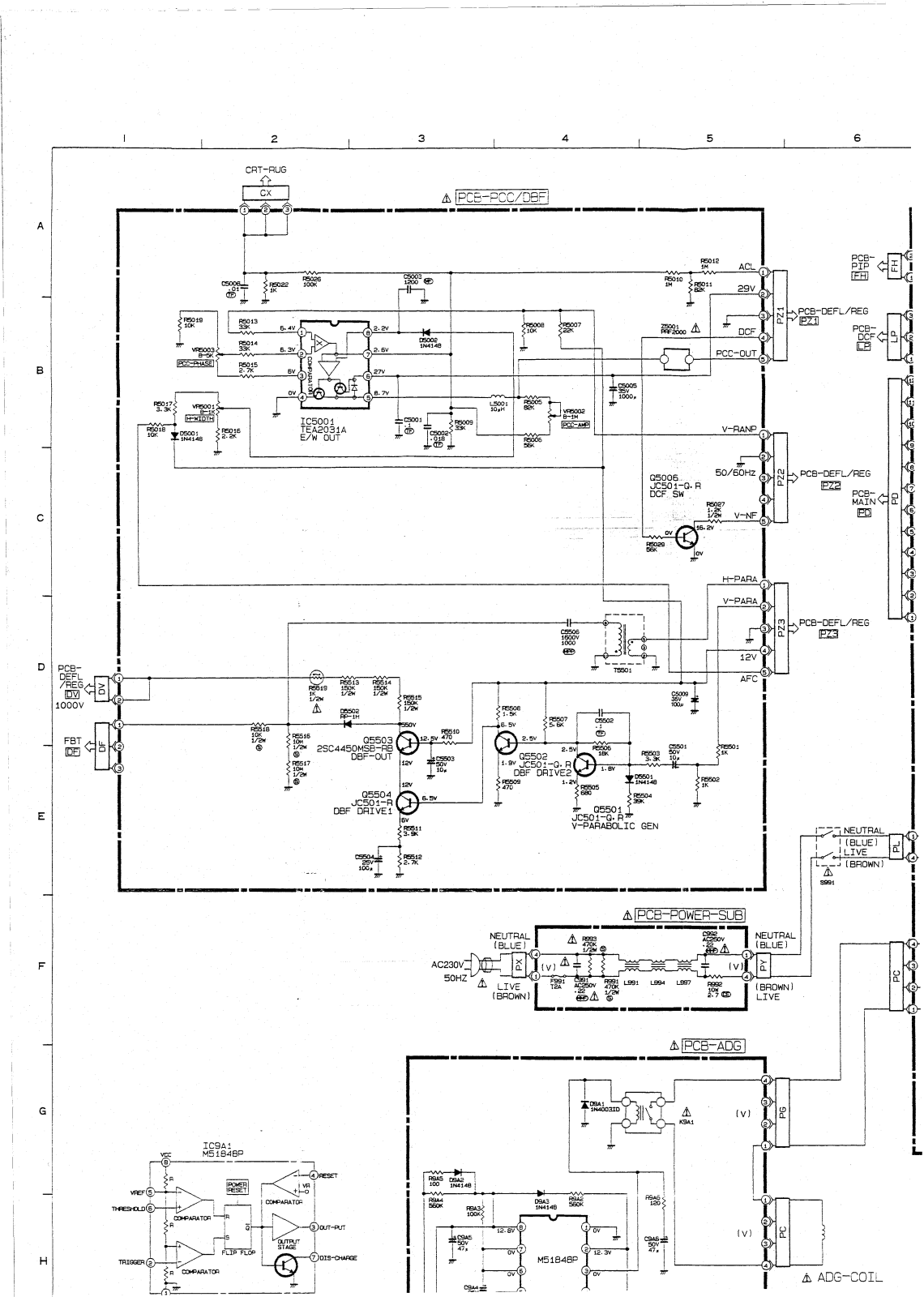
42 5.2Vp-p(H)

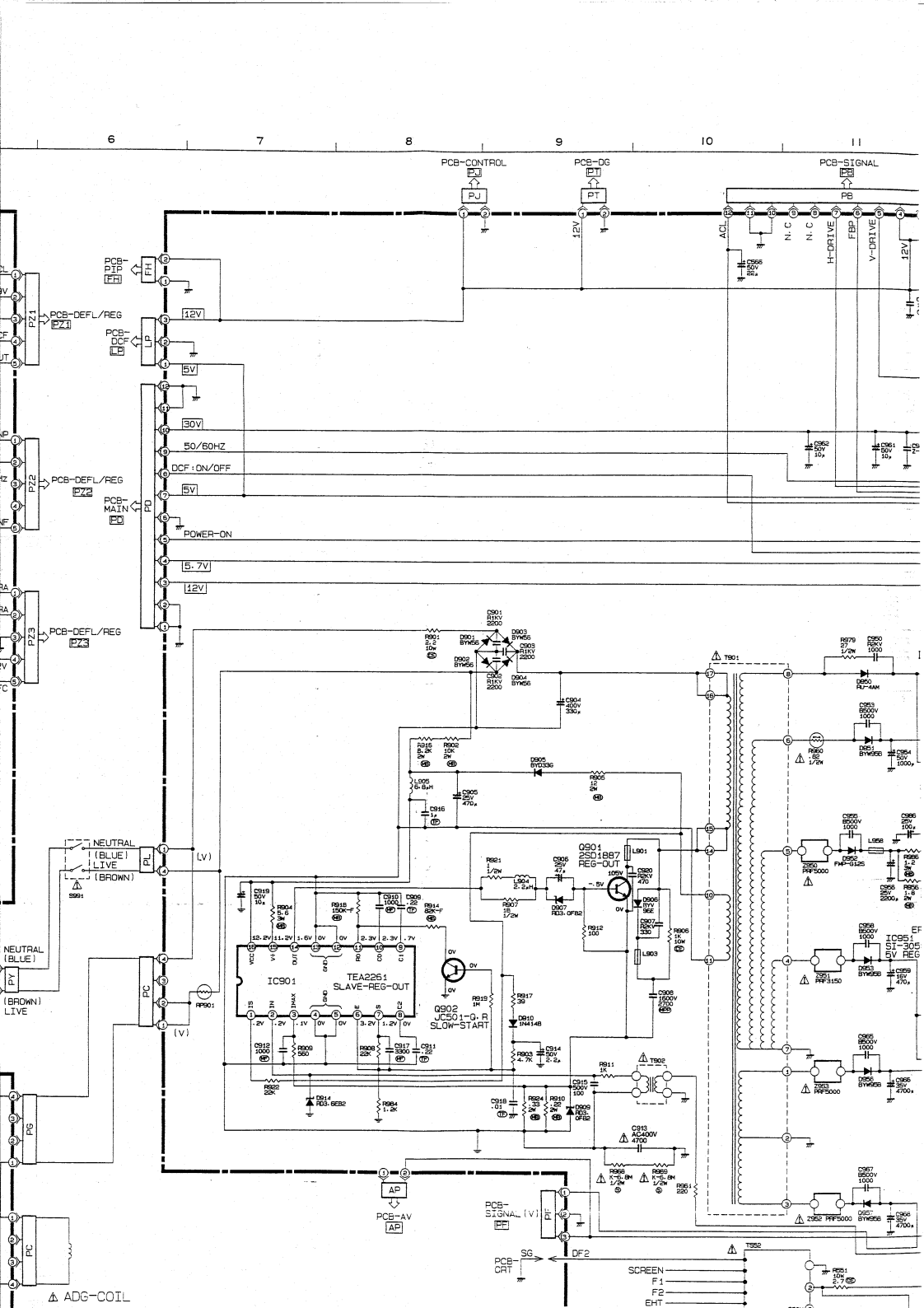
IC7009 M52686P

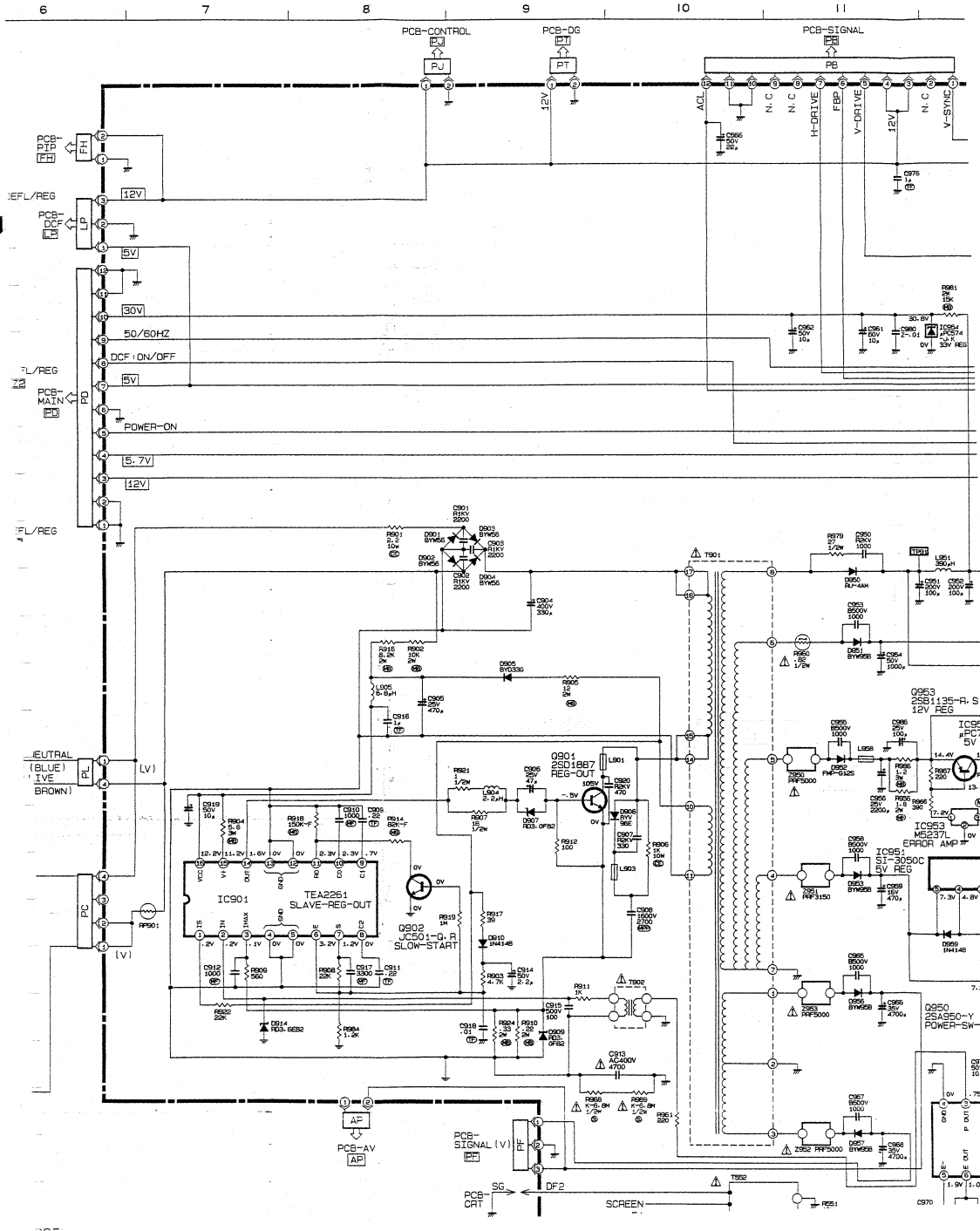
BUFFER

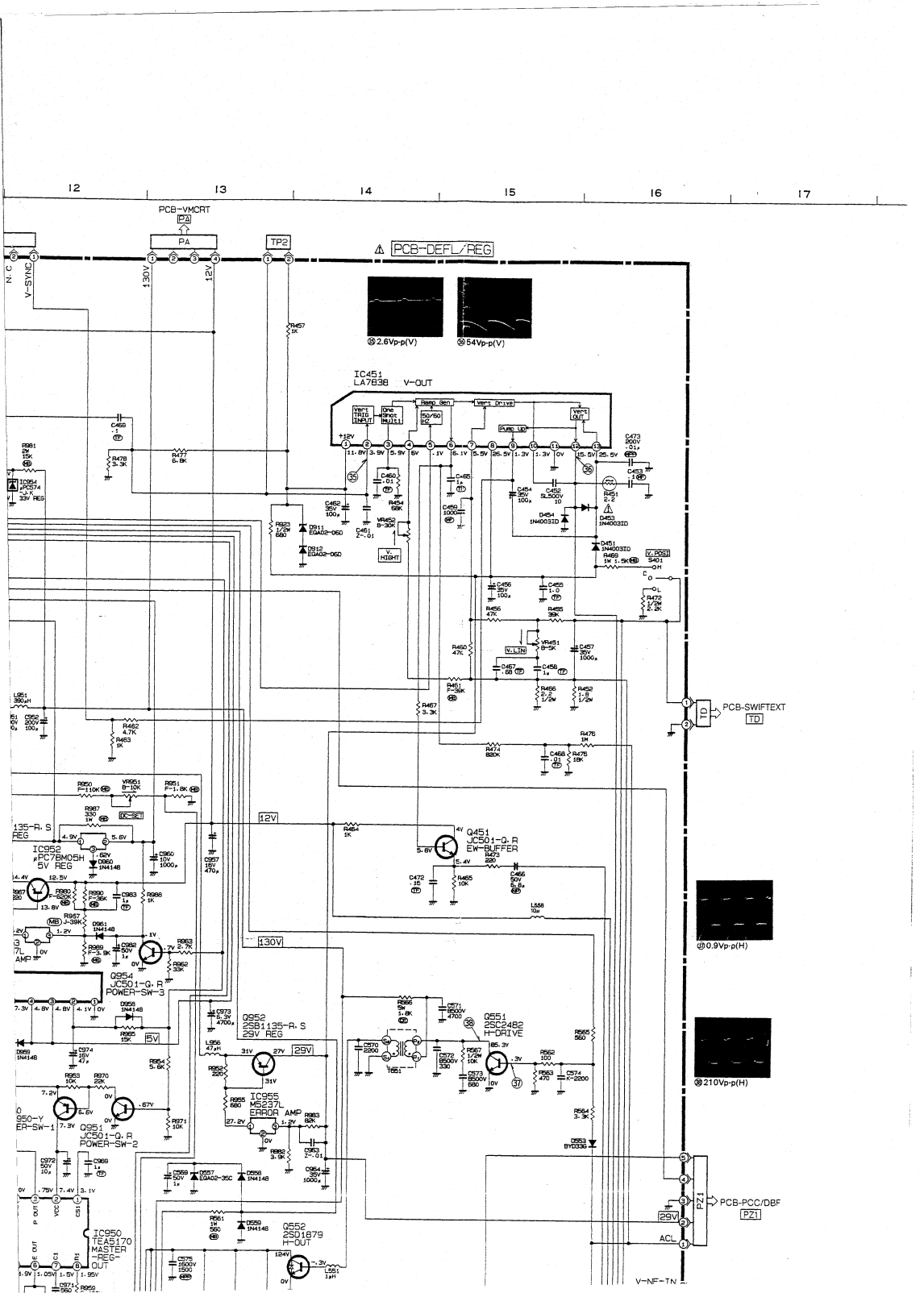
COMP

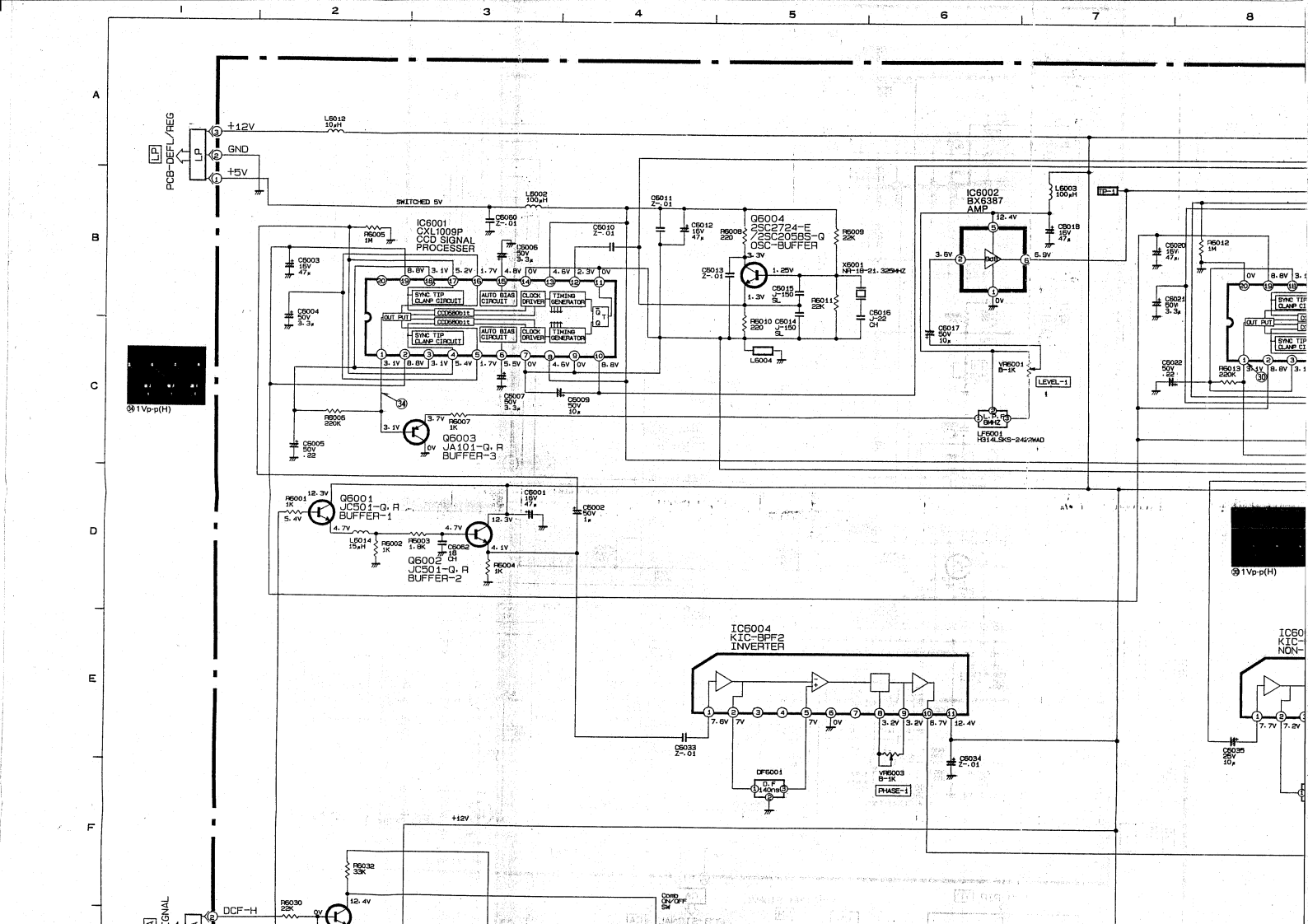
EN-
CODER

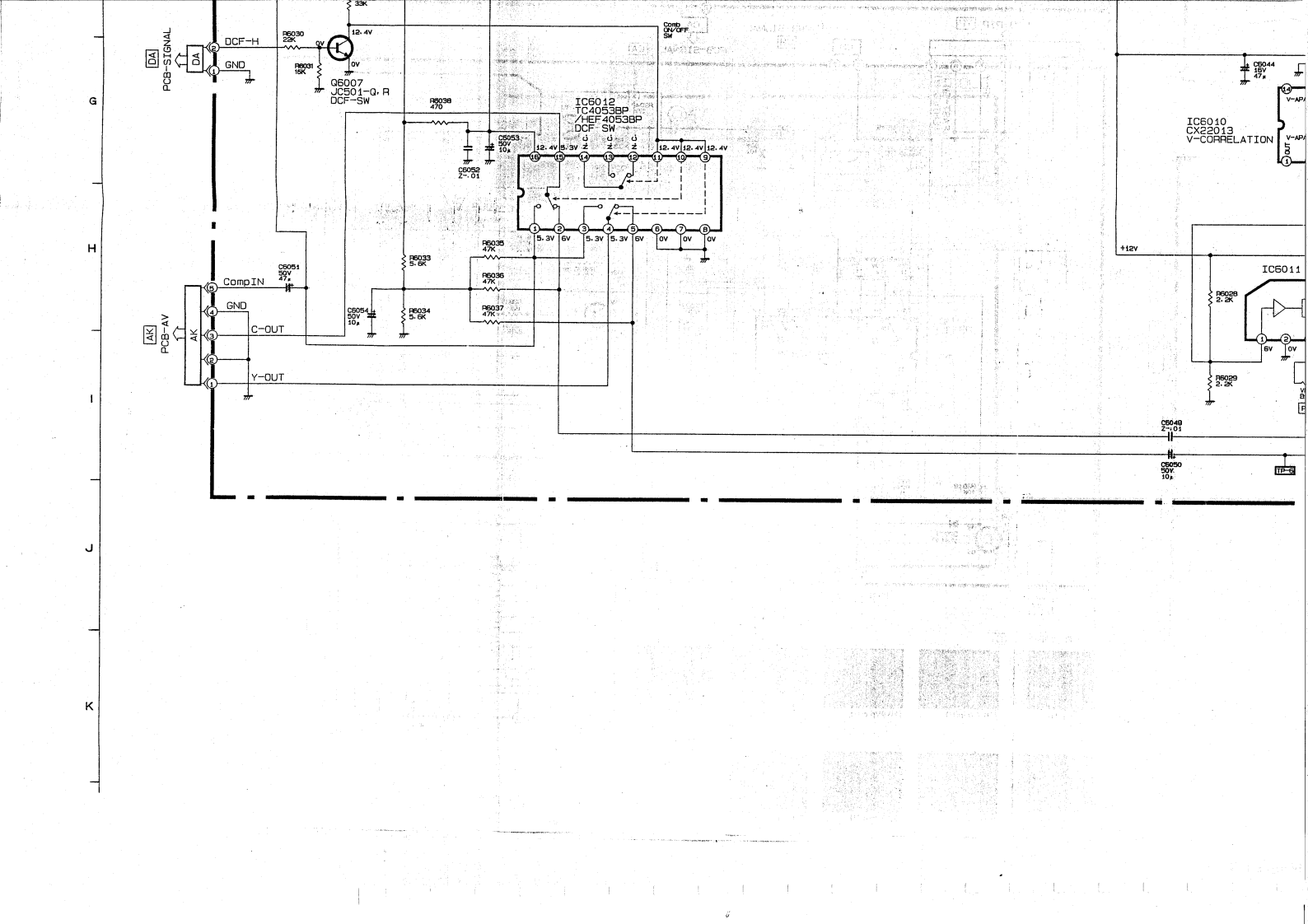

CRT-RUG
CX
PCB-PCC/DBF
IC5001
TEA2031A
E/W OUT
PCC-PHASE
H-WIDTH
PCC-AMP
PCC-OUT
DCF
ACL
29V
V-RANP
50/60HZ
V-NF
H-PARA
V-PARA
12V
AFC
PCB-DEFL/REG
PZ1
PZ2
PZ3
PCB-PIP
PCB-DCF
PCB-MAIN
Q5006
JC501-Q.R
DCF SW
Q5503
2SC4450MSB-PE
DBF-OUT
Q5504
JC501-R
DBF DRIVE1
Q5502
JC501-Q.R
DBF DRIVE2
Q5501
JC501-Q.R
V-PARABOLIC GEN
T5501
PCB-DEFL /REG
DV
1000V
FBT
DF
PCB-POWER-SUB
NEUTRAL
(BLUE)
AC230V
50HZ
LIVE
(BROWN)
PX
PY
PL
PC
PCB-ADG
PG
IC9A1
M51848P
VCC
VREF
THRESHOLD
TRIGGER
POWER RESET
COMPARATOR
FLIP FLOP
OUTPUT STAGE
RESET
OUT-PUT
DIS-CHARGE
ADG-COIL

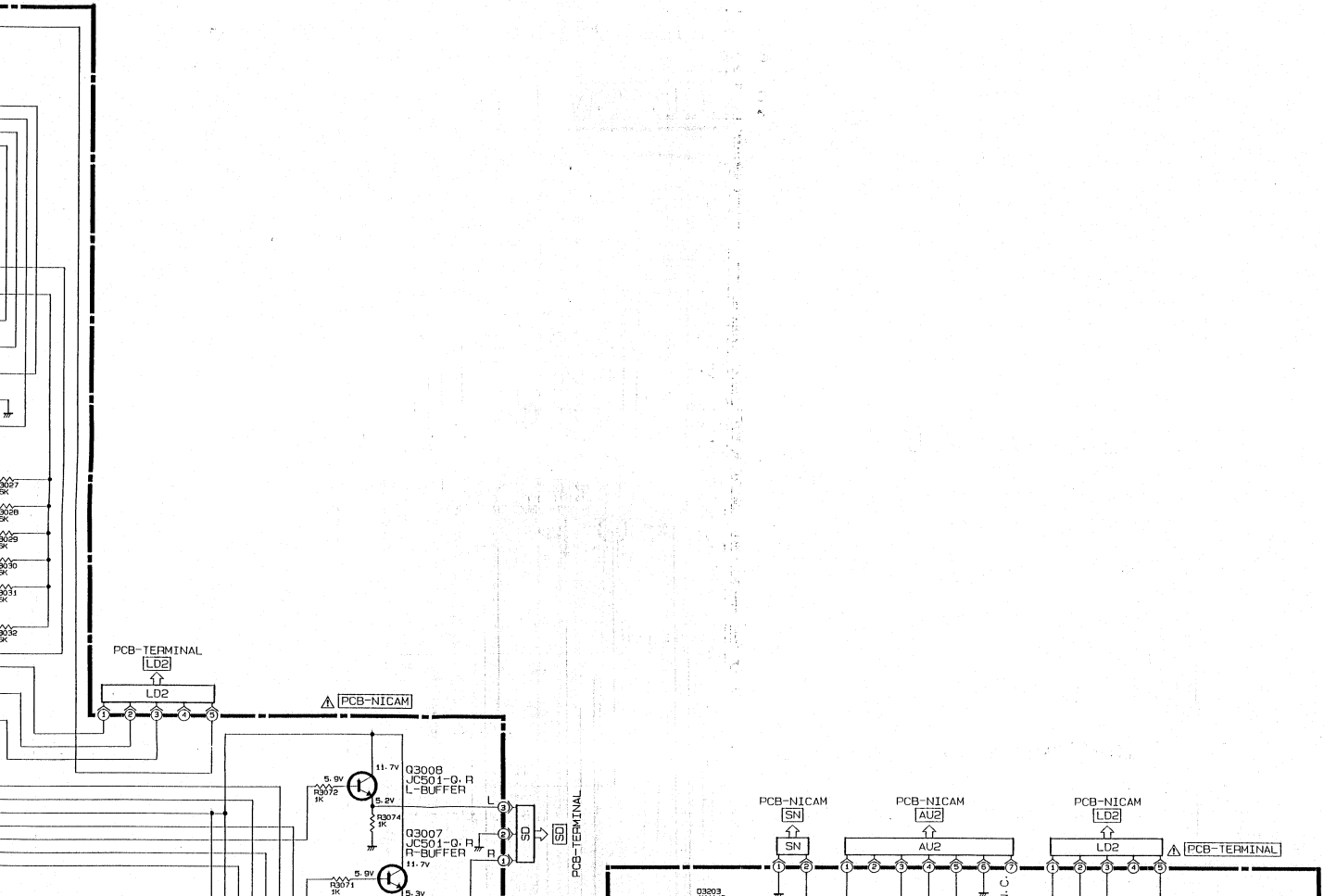

6
7
8
9
10
11
PCB-CONTROL
PJ
PCB-DG
PT
PCB-SIGNAL
PB
PCB-PIP
FH
PCB-DEFL/REG
PZ1
PCB-DCF
LP
12V
5V
30V
50/60HZ
DCF:ON/OFF
PCB-MAIN
PD
POWER-ON
5.7V
PZ2
PZ3
NEUTRAL
(BLUE)
LIVE
(BROWN)
PL
S991
(V)
PC
RP901
PG
AP
PCB-AV
PF
PCB-SIGNAL (V)
SG
DF2
PCB-CRT
SCREEN
F1
F2
EHT
ADG-COIL
IC901
TEA2261
SLAVE-REG-OUT
Q901
2SD1887
REG-OUT
Q902
UC501-Q-R
SLOW-START
T901
T902
T552
ACL
N.C
N.C
H-DRIVE
FBP
V-DRIVE
12V

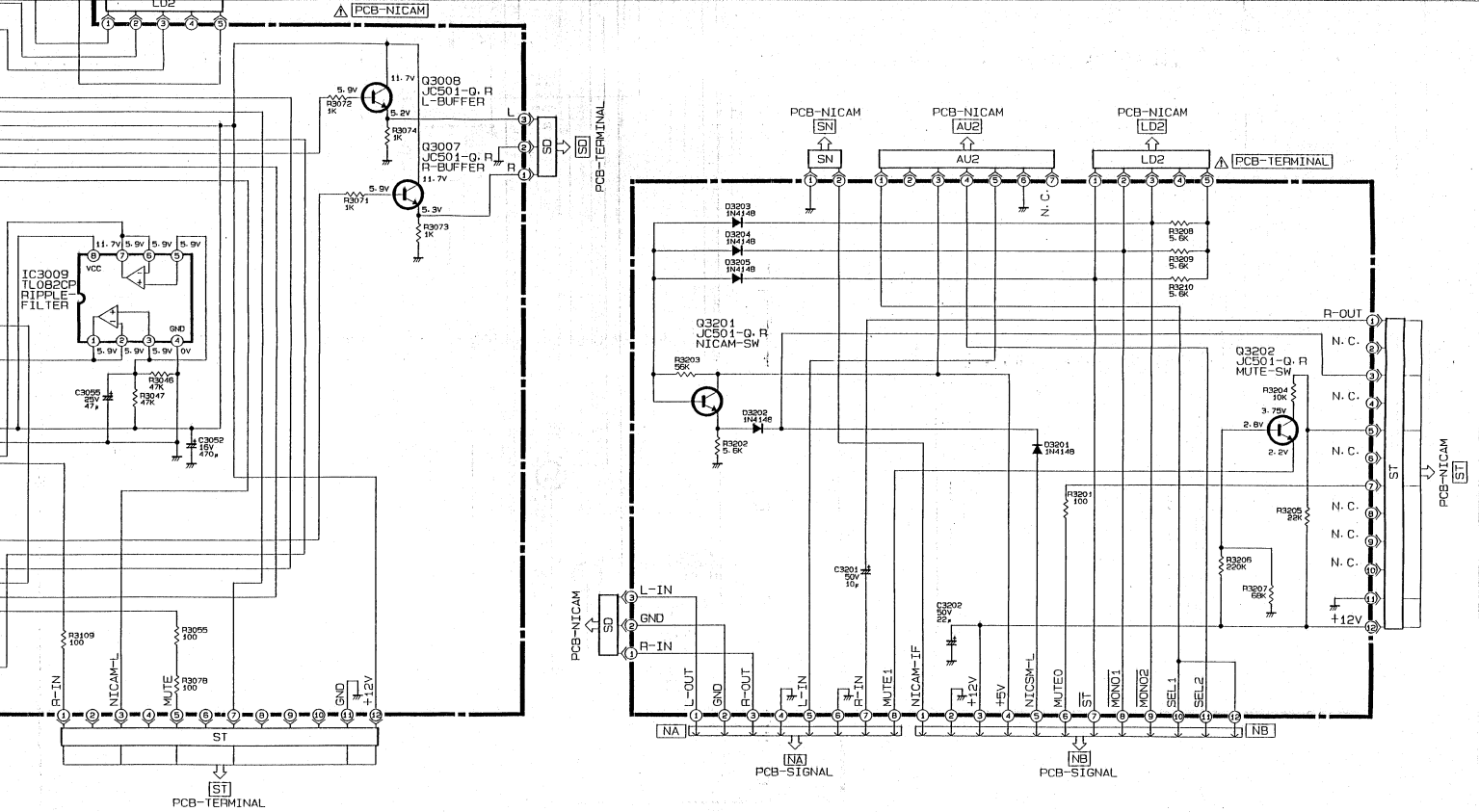

PCB-CONTROL
PJ
PCB-DG
PT
PCB-SIGNAL
PB
12V
ACL
N.C
N.C
H-DRIVE
FBP
V-DRIVE
12V
N.C
V-SYNC
PCB-PTD
FH
12V
PCB-DCF
LP
5V
30V
50/60HZ
DCF:ON/OFF
5V
PCB-MAIN
PD
POWER-ON
5.7V
12V
NEUTRAL
(BLUE)
(V)
(BROWN)
PL
PC
RP501
IC901
TEA2261
SLAVE-REG-OUT
Q901
2SD1887
REG-OUT
Q902
JC501-Q,R
SLOW-START
Q953
2SB1135-R,S
12V REG
IC953
M5237L
ERROR AMP
IC951
SI-3050C
5V REG
Q950
2SA950-Y
POWER-SW-1
T901
T902
T952
AP
PCB-AV
PCB-SIGNAL(V)
PF
PCB-CRT
SG
DF2
SCREEN

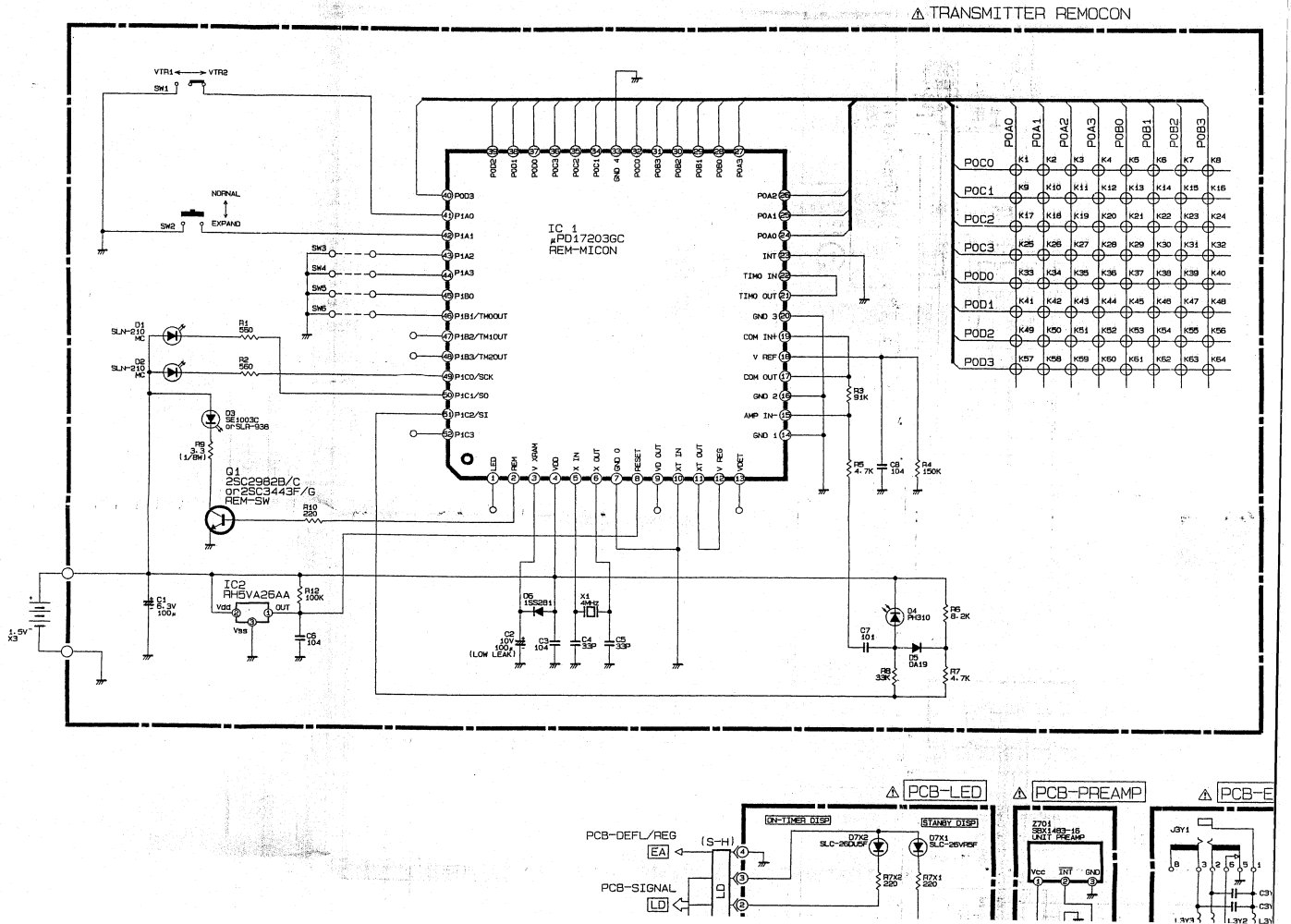

12
13
14
15
16
17
PCB-VMCRT
PA
TP2
PCB-DEFL/REG
N.C
V-SYNC
130V
12V
2.6Vp-p(V)
54Vp-p(V)
IC451
LA7838
V-OUT
Ramp Gen
Vert Drive
Vert TRIG INPUT
One Shot Multi
50/60 Hz
Vert OUT
Pump Up
+12V
11.8V
3.9V
5.9V
6V
.1V
6.1V
5.5V
26.5V
1.3V
0V
15.5V
25.5V
V.HIGHT
V.POS
V.LIN
PCB-SWIFTEXT
TD
IC952
μPC78M05H
5V REG
Q451
JC501-Q,R
EW-BUFFER
0.9Vp-p(H)
Q954
JC501-Q,R
POWER-SW-3
Q952
2SB1135-R,S
29V REG
Q551
2SC2482
H-DRIVE
210Vp-p(H)
IC955
M5237L
ERROR AMP
Q951
JC501-Q,R
POWER-SW-2
PCB-PCC/DBF
PZ1
29V
ACL
IC950
TEA5170
MASTER
-REG-
Q552
2SD1879
H-OUT
V-NF-TN

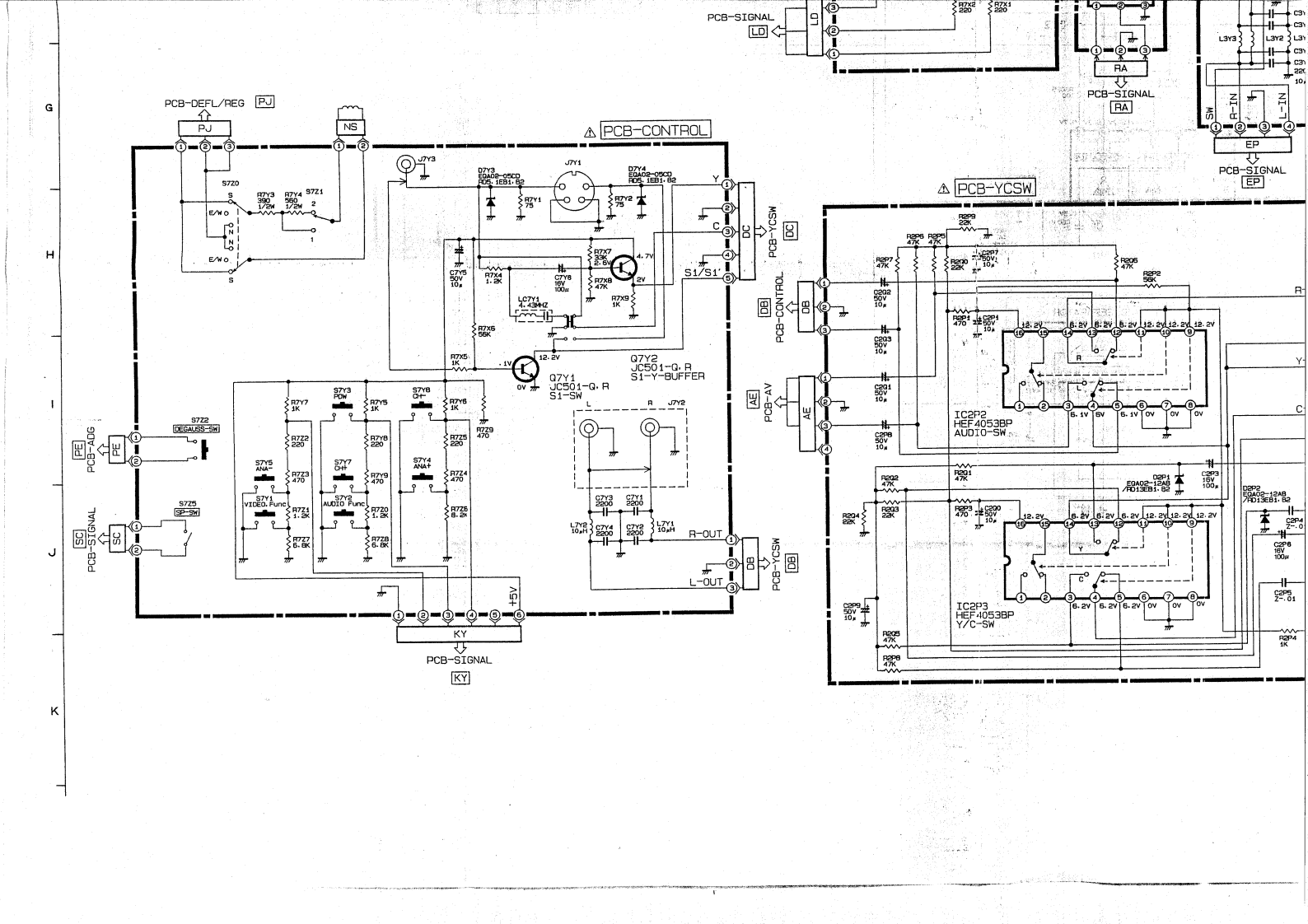

PCB-DEFL/REG
LP
+12V
GND
+5V
L5012 10μH
SWITCHED 5V
L5002 100μH
IC6001 CXL1009P CCD SIGNAL PROCESSER
SYNC TIP CLAMP CIRCUIT
AUTO BIAS CIRCUIT
CLOCK DRIVER
TIMING GENERATOR
OUT PUT
Q6003 JA101-Q, R BUFFER-3
Q6001 JC501-Q, R BUFFER-1
Q6002 JC501-Q, R BUFFER-2
Q6004 2SC2724-E / 2SC2058S-Q OSC-BUFFER
X6001 NR-18-21.3254HZ
IC6002 BX6387 AMP
VR6001 B-1K
LEVEL-1
LF6001 H314LSKS-2422WAD
1Vp-p(H)
IC6004 KIC-BPF2 INVERTER
DF5001 D.F 140ns
VR6003 B-1K
PHASE-1
+12V
DCF-H
Comb ON/OFF SW

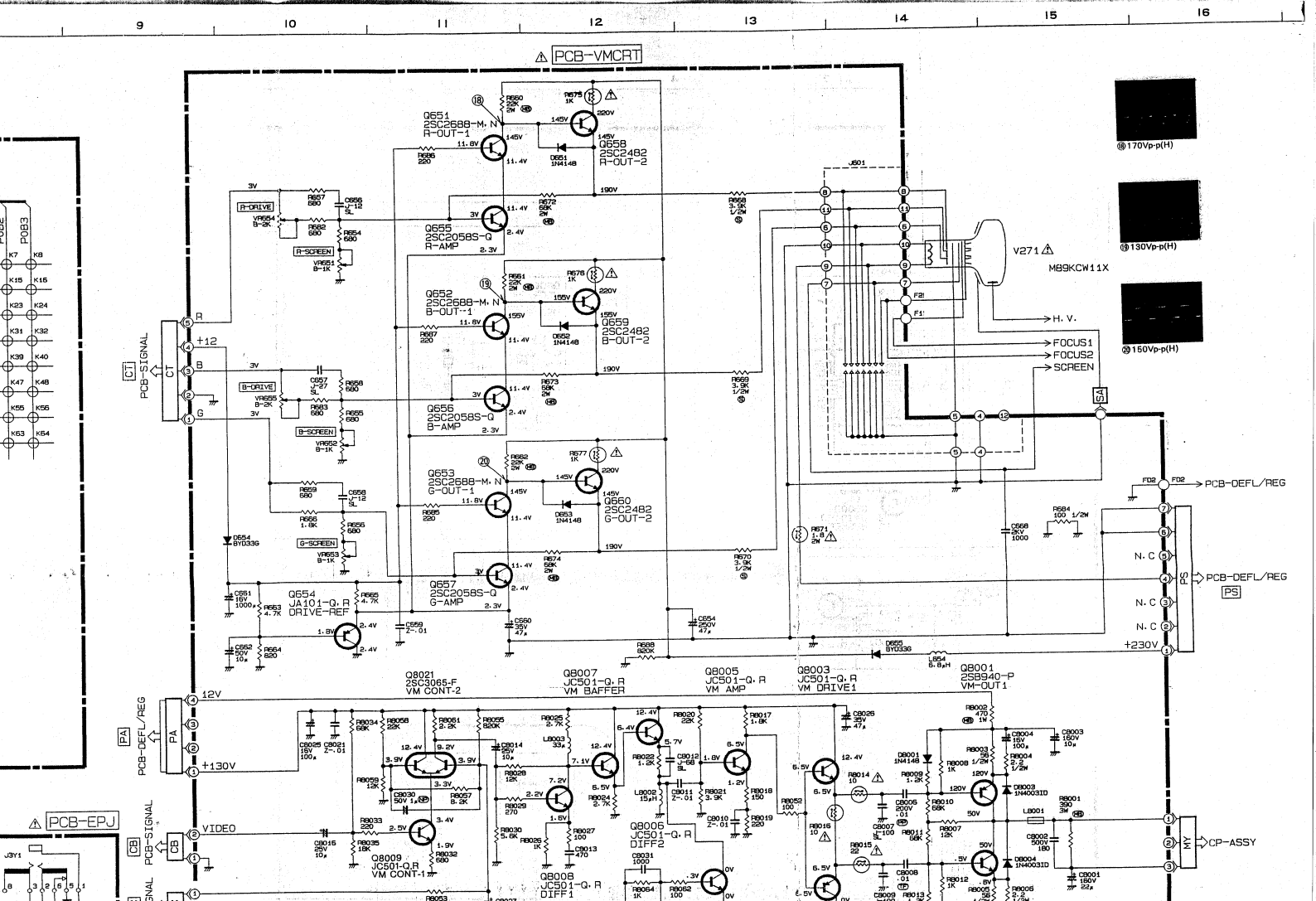

PCB-SIGNAL
DA
DCF-H
GND
R6030 22K
R6031 15K
Q6007 2SC501-Q, R DCF-SW
12.4V
0V
R6038 470
C6053 50V 10μ
C6052 Z-.01
IC6012 TC4053BP /HEF4053BP DCF SW
12.4V 5.3V 6V 5.3V 5.3V 6V 0V 0V 0V
R6035 47K
R6036 47K
R6037 47K
R6033 5.6K
R6034 5.6K
C6054 50V 10μ
C6051 50V 47μ
CompIN
GND
C-OUT
Y-OUT
PCB-AV
AK
Comb ON/OFF SW
C6044 16V 47μ
IC6010 CX22013 V-CORRELATION
V-APA
+12V
IC6011
R6028 2.2K
R6029 2.2K
6V
0V
C6049 Z-.01
C6050 50V 10μ
TP-G

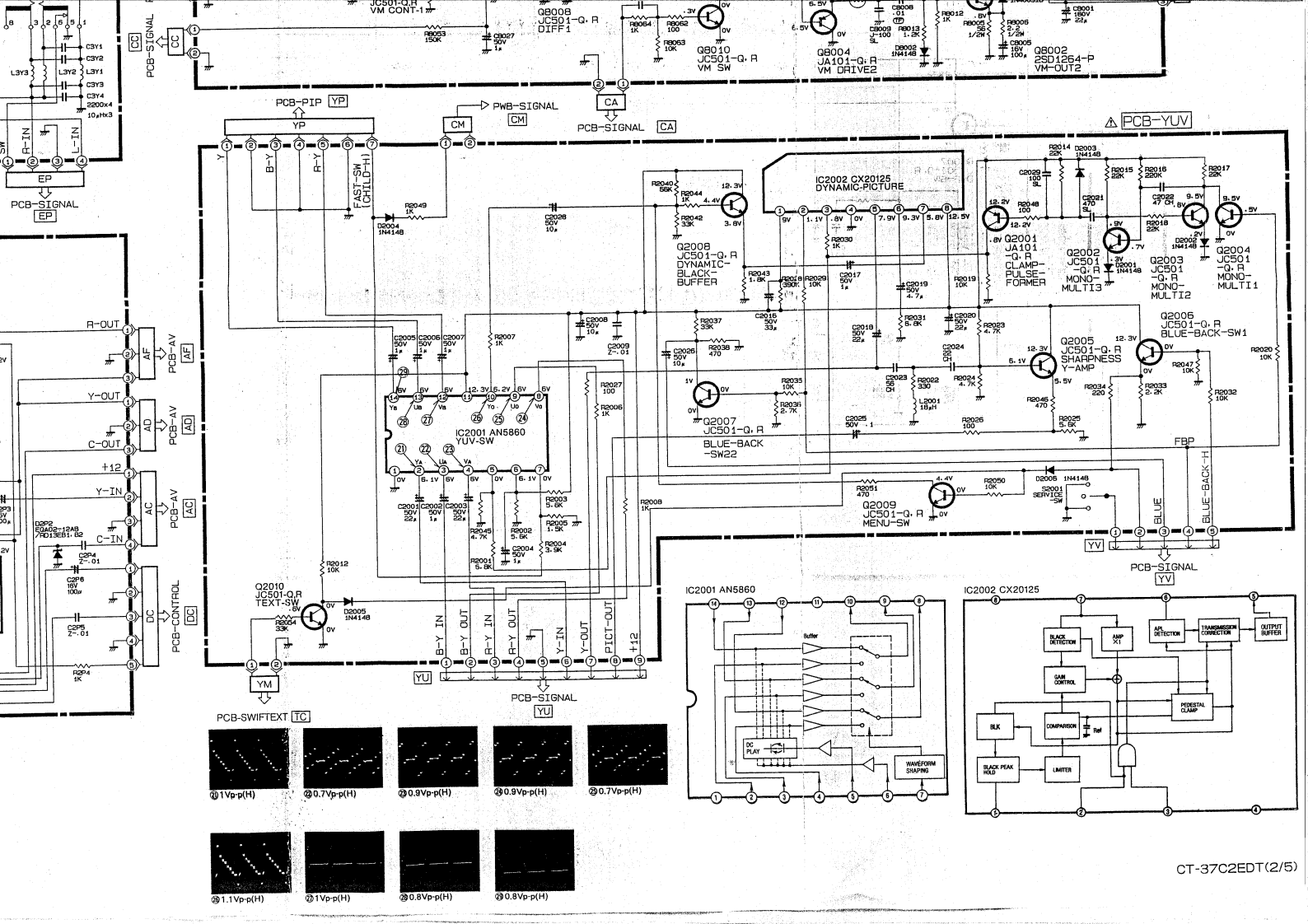

PCB-TERMINAL
LD2
PCB-NICAM
Q3008
JC501-Q, R
L-BUFFER
Q3007
JC501-Q, R
R-BUFFER
11.7V
5.9V
5.2V
15.3V
R3072 1K
R3074 1K
R3071 1K
SD
PCB-NICAM
SN
PCB-NICAM
AU2
PCB-NICAM
LD2
PCB-TERMINAL
Q3803


PCB-NICAM
LD2
Q3008
JC501-Q.R
L-BUFFER
Q3007
JC501-Q.R
R-BUFFER
R3072 1K
R3074 1K
R3071 1K
R3073 1K
11.7V
5.9V
5.2V
5.3V
L
R
SD
PCB-TERMINAL
IC3009
TL082CP
RIPPLE-
FILTER
VCC
GND
0V
C3055 25V 47μ
R3046 47K
R3047 47K
C3052 16V 470μ
R3109 100
R3055 100
R3078 100
R-IN
NICAM-L
MUTE
GND
+12V
ST
PCB-NICAM
SN
AU2
LD2
PCB-TERMINAL
N.C.
D3203 1N4148
D3204 1N4148
D3205 1N4148
R3208 5.6K
R3209 5.6K
R3210 5.6K
Q3201
JC501-Q.R
NICAM-SW
R3203 56K
D3202 1N4148
R3202 5.6K
D3201 1N4148
Q3202
JC501-Q.R
MUTE-SW
R3204 10K
3.75V
2.8V
2.2V
R3201 100
R3205 22K
R3206 220K
R3207 68K
C3201 50V 10μ
C3202 25V 2.2μ
R-OUT
+12V
L-IN
GND
R-IN
L-OUT
R-OUT
L'-IN
R'-IN
MUTE1
NICAM-IF
+12V
+5V
NICSM-L
MUTEO
ST
MONO1
MONO2
SEL1
SEL2
NA
NB
PCB-SIGNAL


⚠ TRANSMITTER REMOCON
IC 1
μPD17203GC
REM-MICON
Q1
2SC2982B/C
OR2SC3443F/G
REM-SW
IC2
RH5VA26AA
⚠ PCB-LED
⚠ PCB-PREAMP
⚠ PCB-E
PCB-DEFL/REG
PCB-SIGNAL
(S-H)
EA
LD
ON-TIMER DISP
STANBY DISP
UNIT PREAMP

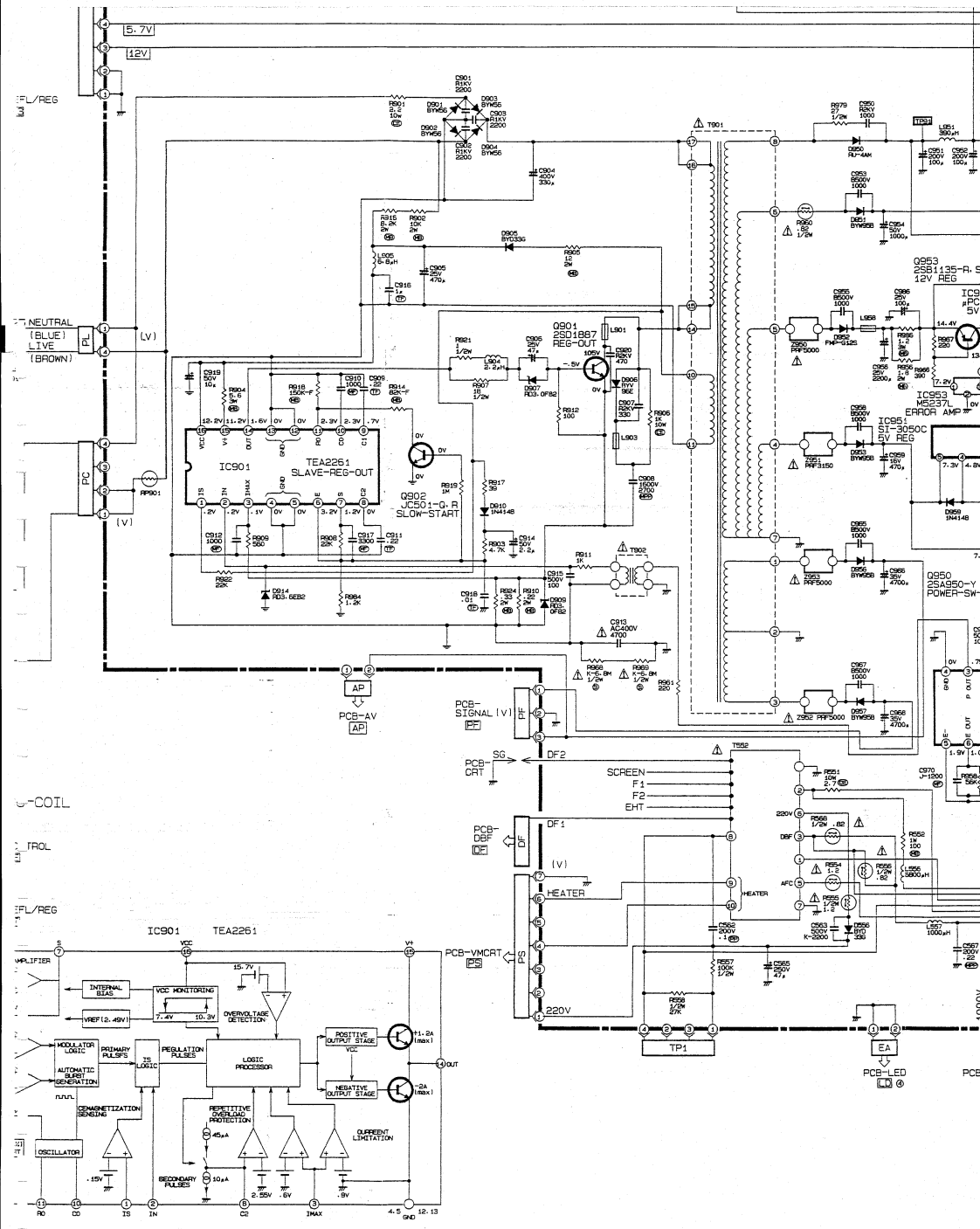

PCB-SIGNAL
LD
RA
EP
PCB-DEFL/REG
PJ
NS
PCB-CONTROL
PCB-YCSW
PCB-AV
PCB-AOG
PCB-SIGNAL
KY
S7Z0
S7Z1
S7Z2
DEGAUSS-SW
S7Z5
SP-SW
S7Y1
VIDEO Func
S7Y2
AUDIO Func
S7Y3
PDW
S7Y4
ANA+
S7Y5
ANA-
S7Y7
CH+
S7Y8
CH-
J7Y1
J7Y2
J7Y3
Q7Y1
JC501-Q, R
S1-SW
Q7Y2
JC501-Q, R
S1-Y-BUFFER
S1/S1'
LC7Y1
4.43MHZ
R-OUT
L-OUT
+5V
PCB-YCSW
PCB-CONTROL
PCB-AV
IC2P2
HEF4053BP
AUDIO-SW
IC2P3
HEF4053BP
Y/C-SW

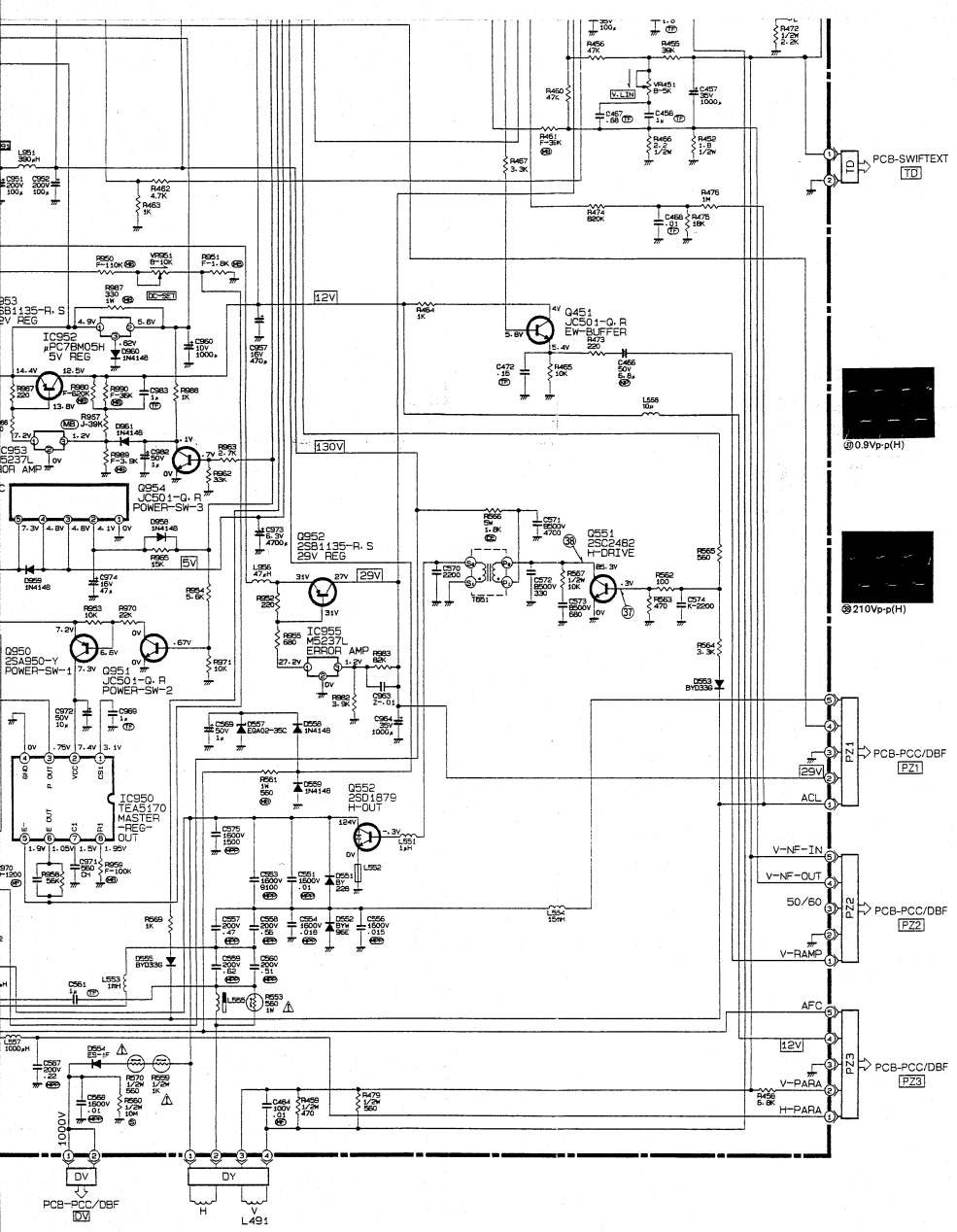

⚠ PCB-VMCRT
⚠ PCB-EPJ
Q651 2SC2688-M, N R-OUT-1
Q658 2SC2482 R-OUT-2
Q655 2SC2058S-Q R-AMP
Q652 2SC2688-M, N B-OUT-1
Q659 2SC2482 B-OUT-2
Q656 2SC2058S-Q B-AMP
Q653 2SC2688-M, N G-OUT-1
Q660 2SC2482 G-OUT-2
Q657 2SC2058S-Q G-AMP
Q654 JA101-Q, R DRIVE-REF
Q8021 2SC3065-F VM CONT-2
Q8007 JC501-Q, R VM BAFFER
Q8005 JC501-Q, R VM AMP
Q8003 JC501-Q, R VM DRIVE1
Q8001 2SB940-P VM-OUT1
Q8009 JC501-Q,R VM CONT-1
Q8008 JC501-Q, R DIFF1
Q8006 JC501-Q, R DIFF2
J601
V271 ⚠ M89KCW11X
⑱170Vp-p(H)
⑲130Vp-p(H)
⑳150Vp-p(H)
H. V.
FOCUS1
FOCUS2
SCREEN
R-DRIVE
B-DRIVE
G-DRIVE
R-SCREEN
B-SCREEN
G-SCREEN
PCB-SIGNAL
PCB-DEFL/REG
PCB-EPJ
CP-ASSY
+12
+130V
+230V
VIDEO
N. C



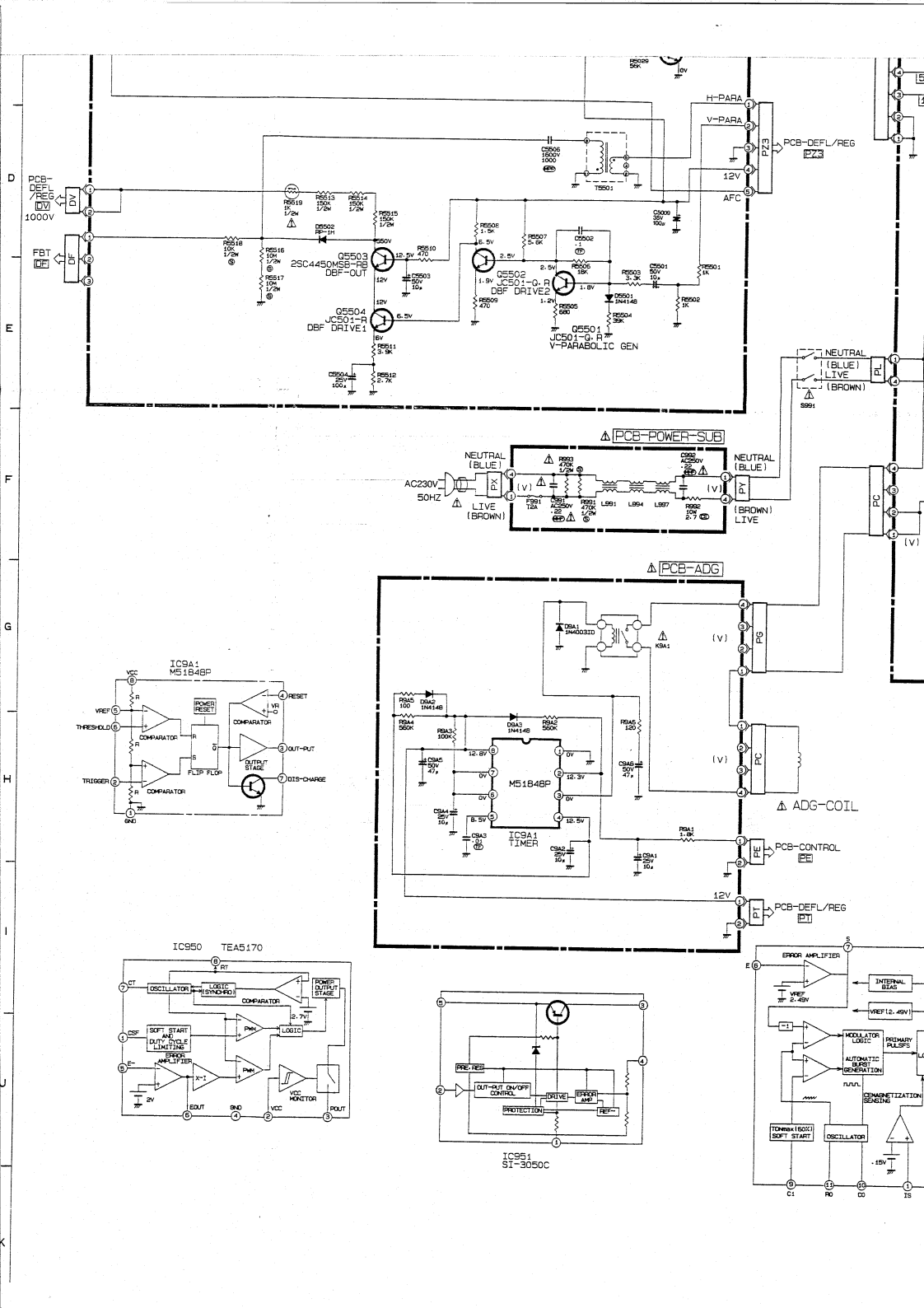
⑳1Vp-p(H) ㉒0.7Vp-p(H) ㉓0.9Vp-p(H) ㉔0.9Vp-p(H) ㉕0.7Vp-p(H)

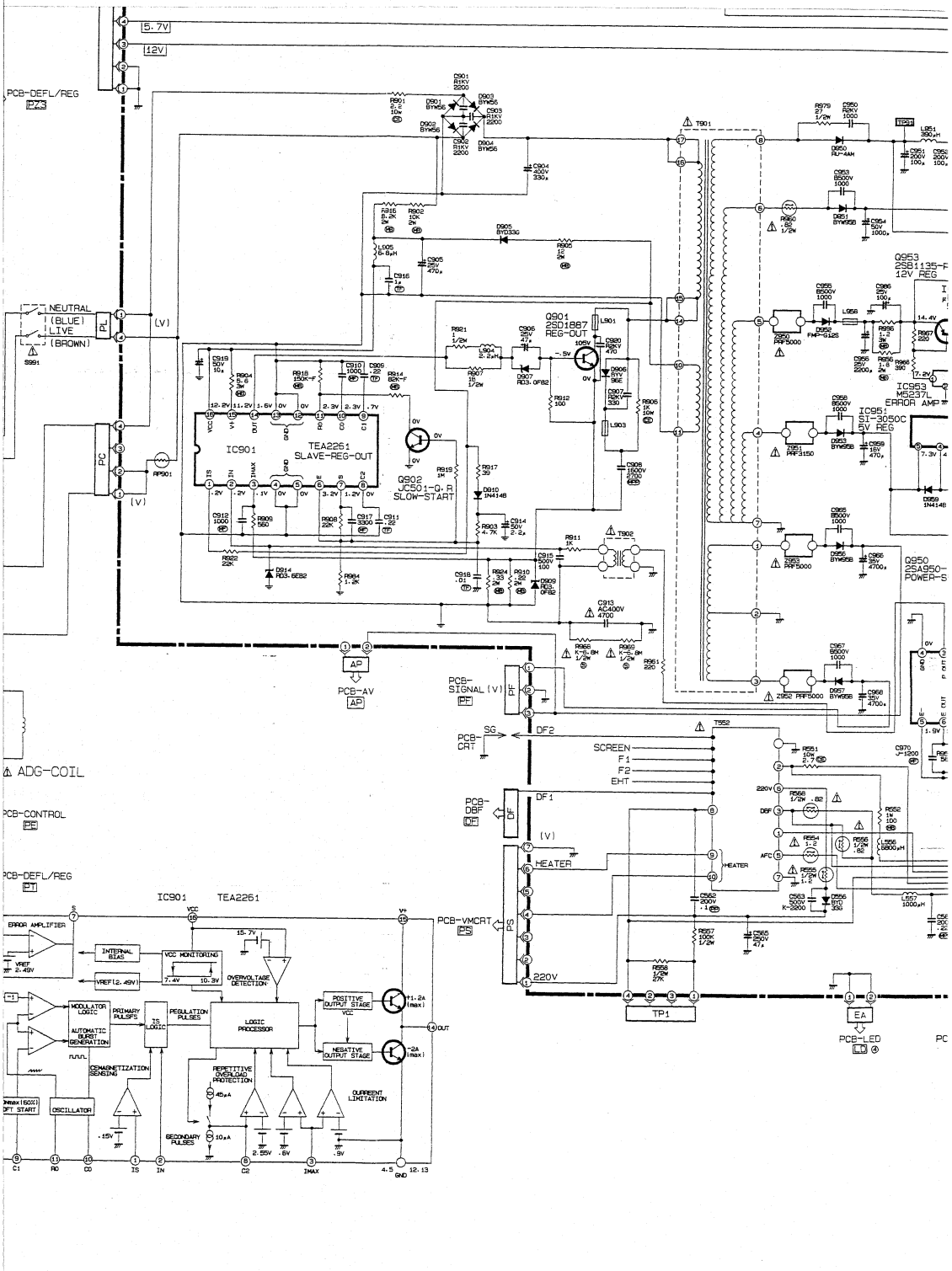
㉖1.1Vp-p(H) ㉗1Vp-p(H) ㉘0.8Vp-p(H) ㉙0.8Vp-p(H)

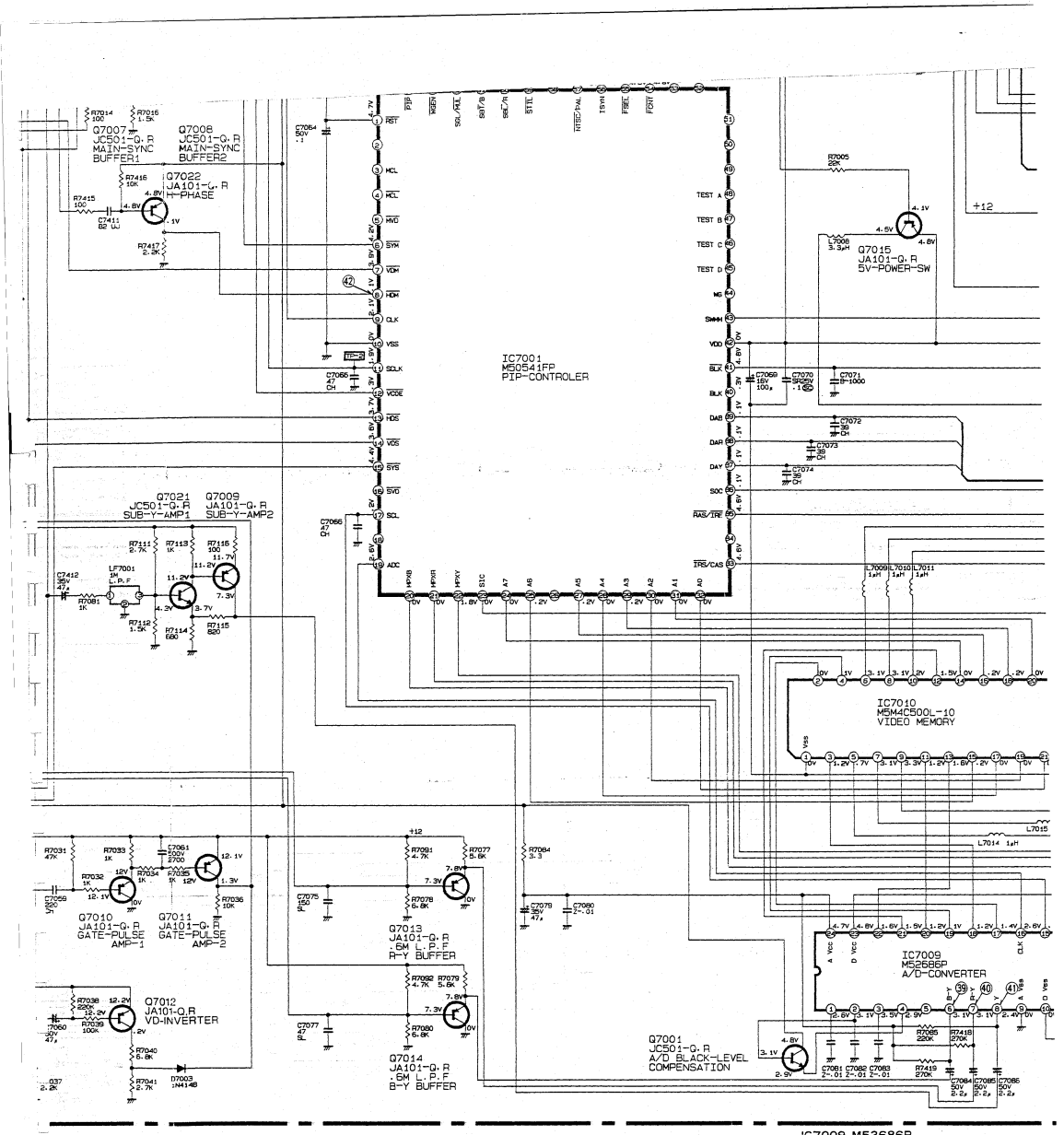

5.7V
12V
NEUTRAL
(BLUE)
LIVE
(BROWN)
PL
PC
AP901
IC901
TEA2261
SLAVE-REG-OUT
Q901
2SD1887
REG-OUT
Q902
UC501-Q,R
SLOW-START
Q953
2SB1135-A,S
12V REG
IC953
M52371
ERROR AMP
IC951
ST-3050C
5V REG
Q950
2SA950-Y
POWER-SW
T901
T902
T951
T952
AP
PCB-AV
PCB-
SIGNAL (V)
PCB-
CRT
PCB-
DBF
PCB-VMCRT
PCB-LED
TP1
EA
SG
DF
DF1
DF2
PS
SCREEN
F1
F2
EHT
HEATER
DBF
AFC
220V
(V)
IC901 TEA2261
INTERNAL BIAS
VCC MONITORING
VREF(2.49V)
OVERVOLTAGE DETECTION
MODULATOR LOGIC
PRIMARY PULSES
AUTOMATIC BURST GENERATION
IS LOGIC
REGULATION PULSES
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
NEGATIVE OUTPUT STAGE
DEMAGNETIZATION SENSING
REPETITIVE OVERLOAD PROTECTION
CURRENT LIMITATION
OSCILLATOR
SECONDARY PULSES
OUT
GND

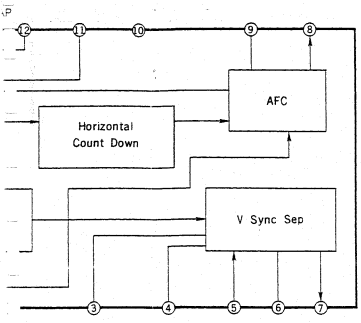


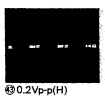
CT-37C2EDT(3/5)


PCB-DEFL/REG
DV
1000V
FBT
DF
Q5503
2SC4450MSB-RE
DBF-OUT
Q5504
JC501-R
DBF DRIVE1
Q5502
JC501-G.R
DBF DRIVE2
Q5501
JC501-G.R
V-PARABOLIC GEN
H-PARA
V-PARA
12V
AFC
PZ3
PCB-DEFL/REG
PZ3
T5501
NEUTRAL
(BLUE)
LIVE
(BROWN)
S991
PCB-POWER-SUB
AC230V
50HZ
PIX
PY
PIC
PCB-ADG
PS
PC
ADG-COIL
PE
PCB-CONTROL
PT
PCB-DEFL/REG
IC9A1
M51848P
VCC
VREF
THRESHOLD
TRIGGER
GND
RESET
OUT-PUT
DIS-CHARGE
COMPARATOR
FLIP FLOP
OUTPUT STAGE
POWER RESET
TIMER
IC950 TEA5170
OSCILLATOR
LOGIC (SYNCHRO)
SOFT START AND DUTY CYCLE LIMITING
ERROR AMPLIFIER
POWER OUTPUT STAGE
VCC MONITOR
IC951
SI-3050C
PRE-REG
OUT-OUT ON/OFF CONTROL
PROTECTION
DRIVE
ERROR AMP
REF
INTERNAL BIAS
MODULATOR LOGIC
AUTOMATIC BURST GENERATION
PRIMARY PULSES
DEMAGNETIZATION SENSING
SOFT START
OSCILLATOR

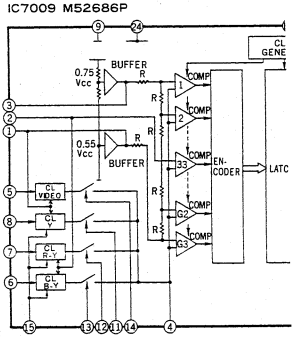

5.7V
12V
PCB-DEFL/REG
PZ3
NEUTRAL
(BLUE)
LIVE
(BROWN)
S991
PL
PC
IC901
TEA2261
SLAVE-REG-OUT
Q902
JC501-Q,R
SLOW-START
Q901
2SD1887
REG-OUT
T901
T902
IC901 TEA2261
ERROR AMPLIFIER
INTERNAL BIAS
VCC MONITORING
OVERVOLTAGE DETECTION
MODULATOR LOGIC
AUTOMATIC BURST GENERATION
PRIMARY PULSES
REGULATION PULSES
IS LOGIC
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
NEGATIVE OUTPUT STAGE
DEMAGNETIZATION SENSING
REPETITIVE OVERLOAD PROTECTION
CURRENT LIMITATION
OSCILLATOR
SECONDARY PULSES
AP
PCB-AV
PCB-SIGNAL (V)
PF
PCB-CRT
SG
DF2
SCREEN
F1
F2
EHT
PCB-DEF
DF
DF1
HEATER
PCB-VMCRT
PS
220V
TP1
EA
PCB-LED
LD
ADG-COIL
PCB-CONTROL
PE
PCB-DEFL/REG
PT

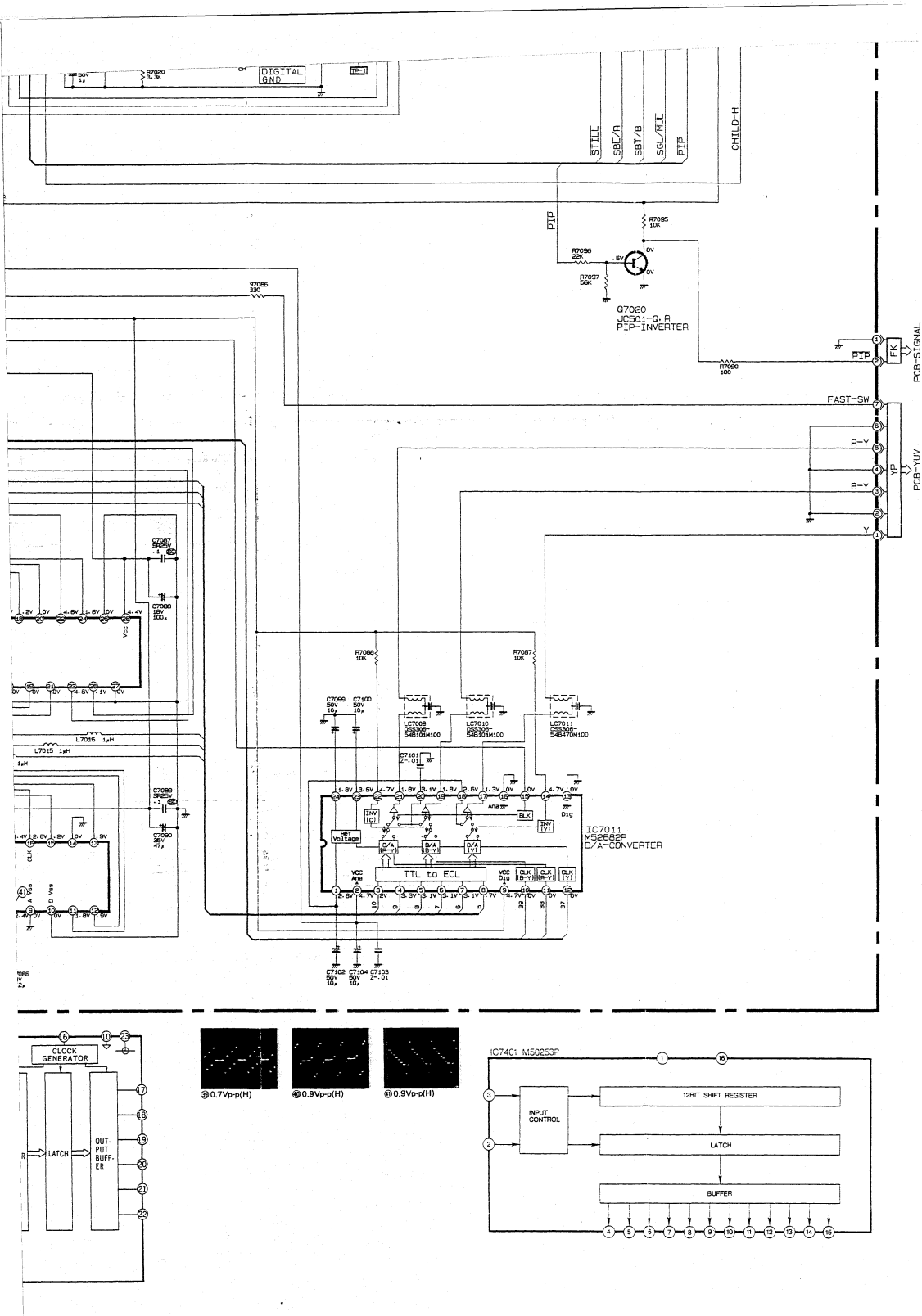

IC7001
M50541FP
PIP-CONTROLER
Q7007
JC501-Q.R
MAIN-SYNC
BUFFER1
Q7008
JC501-Q.R
MAIN-SYNC
BUFFER2
Q7022
JA101-Q.R
H-PHASE
Q7015
JA101-Q.R
5V-POWER-SW
Q7021
JC501-Q.R
SUB-Y-AMP1
Q7009
JA101-Q.R
SUB-Y-AMP2
IC7010
M5M4C500L-10
VIDEO MEMORY
Q7010
JA101-Q.R
GATE-PULSE
AMP-1
Q7011
JA101-Q.R
GATE-PULSE
AMP-2
Q7013
JA101-Q.R
.6M L.P.F.
R-Y BUFFER
Q7014
JA101-Q.R
.6M L.P.F.
B-Y BUFFER
Q7012
JA101-Q.R
VD-INVERTER
IC7009
M52686P
A/D-CONVERTER
Q7001
JC501-Q.R
A/D BLACK-LEVEL
COMPENSATION
+12
+5

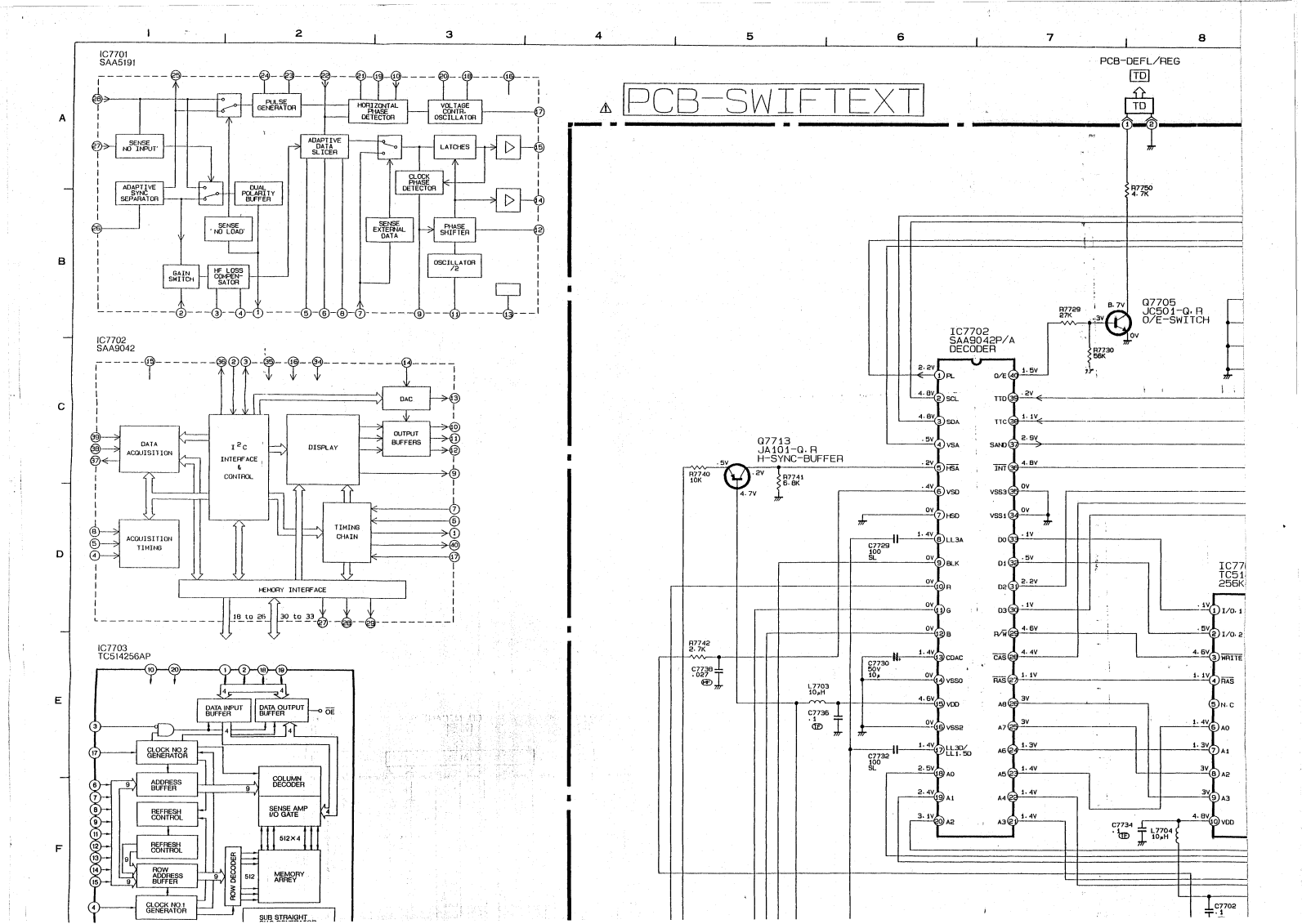

Horizontal
Count Down
AFC
V Sync Sep

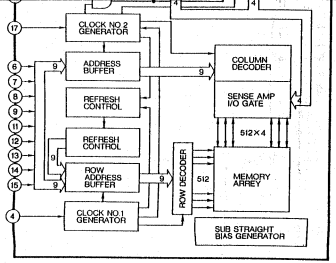

43 0.2Vp-p(H)

42 5.2Vp-p(H)

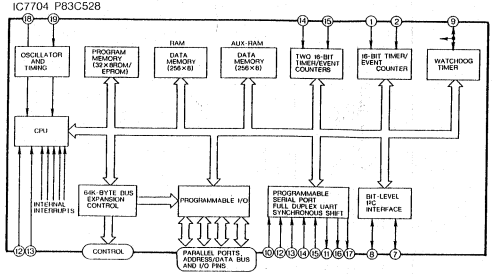

IC7009 M52686P
BUFFER
0.75 Vcc
0.55 Vcc
COMP
EN-CODER
CL VIDEO
CL Y
CL R-Y
CL B-Y


DIGITAL GND
STILL
SBC/A
SBY/B
SGL/MUL
PIP
CHILD-H
R7095 10K
R7096 22K
R7097 56K
Q7020 .6V 0V 0V
Q7020 -JC501-Q.A PIP-INVERTER
R7086 330
R7090 100
PIP
FAST-SW
R-Y
B-Y
Y
PCB-SIGNAL
PCB-YUV
C7087 SR25V .1
C7088 16V 100μ
L7015 1μH
C7089 SR25V .1
C7090 35V 47μ
R7088 10K
R7087 10K
C7099 50V 10μ
C7100 50V 10μ
LC7009 DS330F- 548101M100
LC7010 DS330F- 548101M100
LC7011 DS330F- 548470M100
C7101 2-.01
IC7011 M52882P D/A-CONVERTER
TTL to ECL
Ref Voltage
C7102 50V 10μ
C7104 50V 10μ
C7103 2-.01
CLOCK GENERATOR
LATCH
OUT-PUT BUFF-ER
㊴ 0.7Vp-p(H)
㊵ 0.9Vp-p(H)
㊶ 0.9Vp-p(H)
IC7401 M50253P
INPUT CONTROL
12BIT SHIFT REGISTER
LATCH
BUFFER

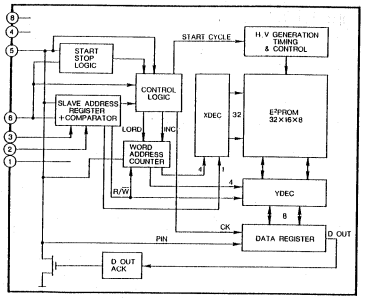

PCB-SWIFTEXT
PCB-DEFL/REG
IC7701
SAA5191
PULSE GENERATOR
HORIZONTAL PHASE DETECTOR
VOLTAGE CONTR. OSCILLATOR
SENSE NO INPUT
ADAPTIVE DATA SLICER
LATCHES
ADAPTIVE SYNC SEPARATOR
DUAL POLARITY BUFFER
CLOCK PHASE DETECTOR
SENSE NO LOAD
SENSE EXTERNAL DATA
PHASE SHIFTER
GAIN SWITCH
HF LOSS COMPEN-SATOR
OSCILLATOR /2
IC7702
SAA9042
DAC
DATA ACQUISITION
I²C INTERFACE & CONTROL
DISPLAY
OUTPUT BUFFERS
ACQUISITION TIMING
TIMING CHAIN
MEMORY INTERFACE
18 to 26
30 to 33
IC7703
TC514256AP
DATA INPUT BUFFER
DATA OUTPUT BUFFER
OE
CLOCK NO.2 GENERATOR
ADDRESS BUFFER
COLUMN DECODER
REFRESH CONTROL
SENSE AMP I/O GATE
512×4
REFRESH CONTROL
ROW ADDRESS BUFFER
ROW DECODER
512
MEMORY ARREY
CLOCK NO.1 GENERATOR
SUB STRAIGHT
TD
TD
R7750
4.7K
R7729
27K
8.7V
3V
Q7705
JC501-Q.R
O/E-SWITCH
0V
R7730
56K
IC7702
SAA9042P/A
DECODER
Q7713
JA101-Q.R
H-SYNC-BUFFER
R7740
10K
5V
2V
4.7V
R7741
6.8K
C7729
100
SL
R7742
2.7K
C7738
.027
C7730
50V
10μ
L7703
10μH
C7736
C7732
100
SL
PL
SCL
SDA
VSA
HSA
VSD
HSO
LL3A
BLK
R
G
B
CDAC
VSS0
VDD
VSS2
LL3O/
LL1.5O
A0
A1
A2
O/E
TTD
TTC
SAND
INT
VSS3
VSS1
D0
D1
D2
D3
R/W
CAS
RAS
A8
A7
A6
A5
A4
A3
IC77
TC51
256K
I/O.1
I/O.2
WRITE
RAS
N.C
A0
A1
A2
A3
VDD
C7734
L7704
10μH
C7702

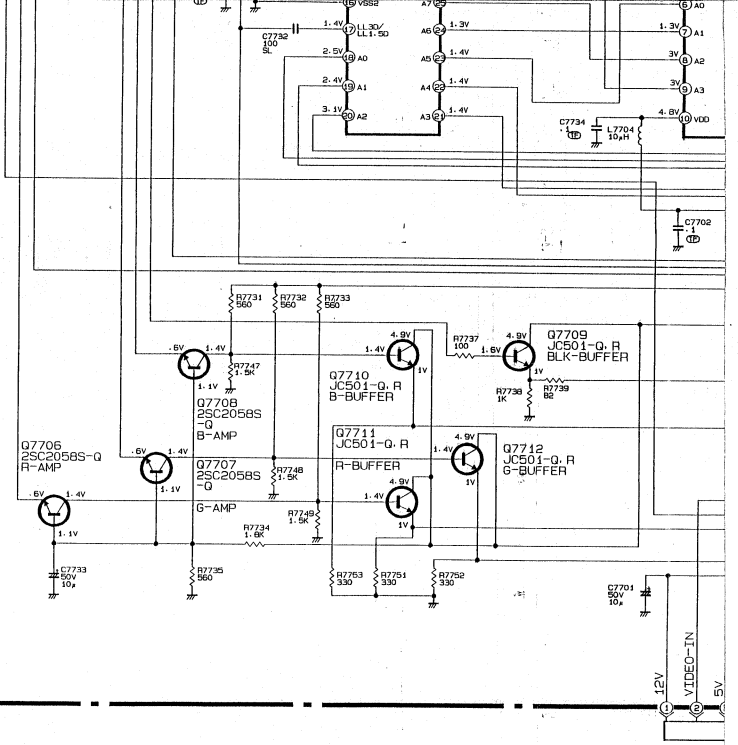


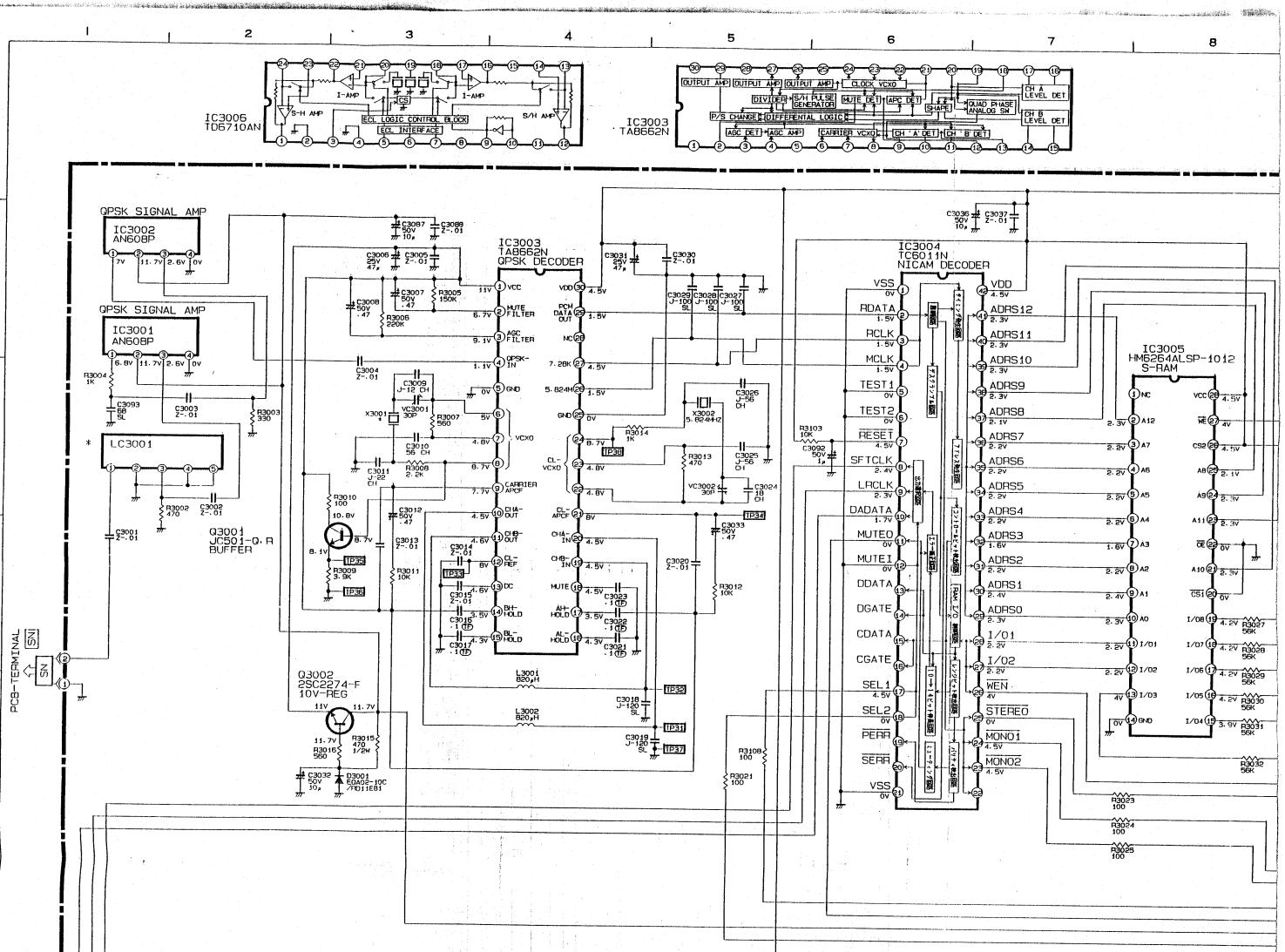
IC7704 P83C528

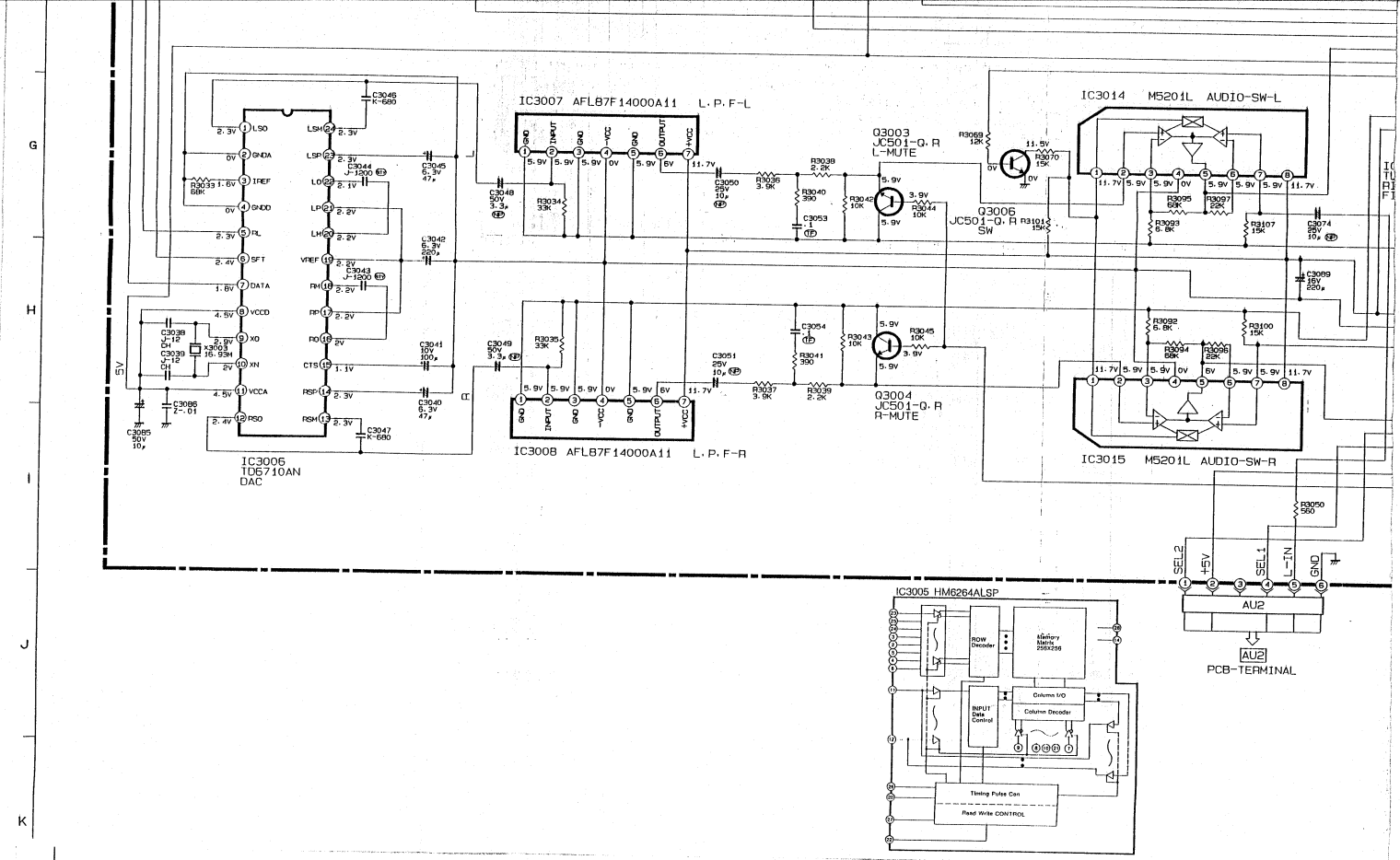


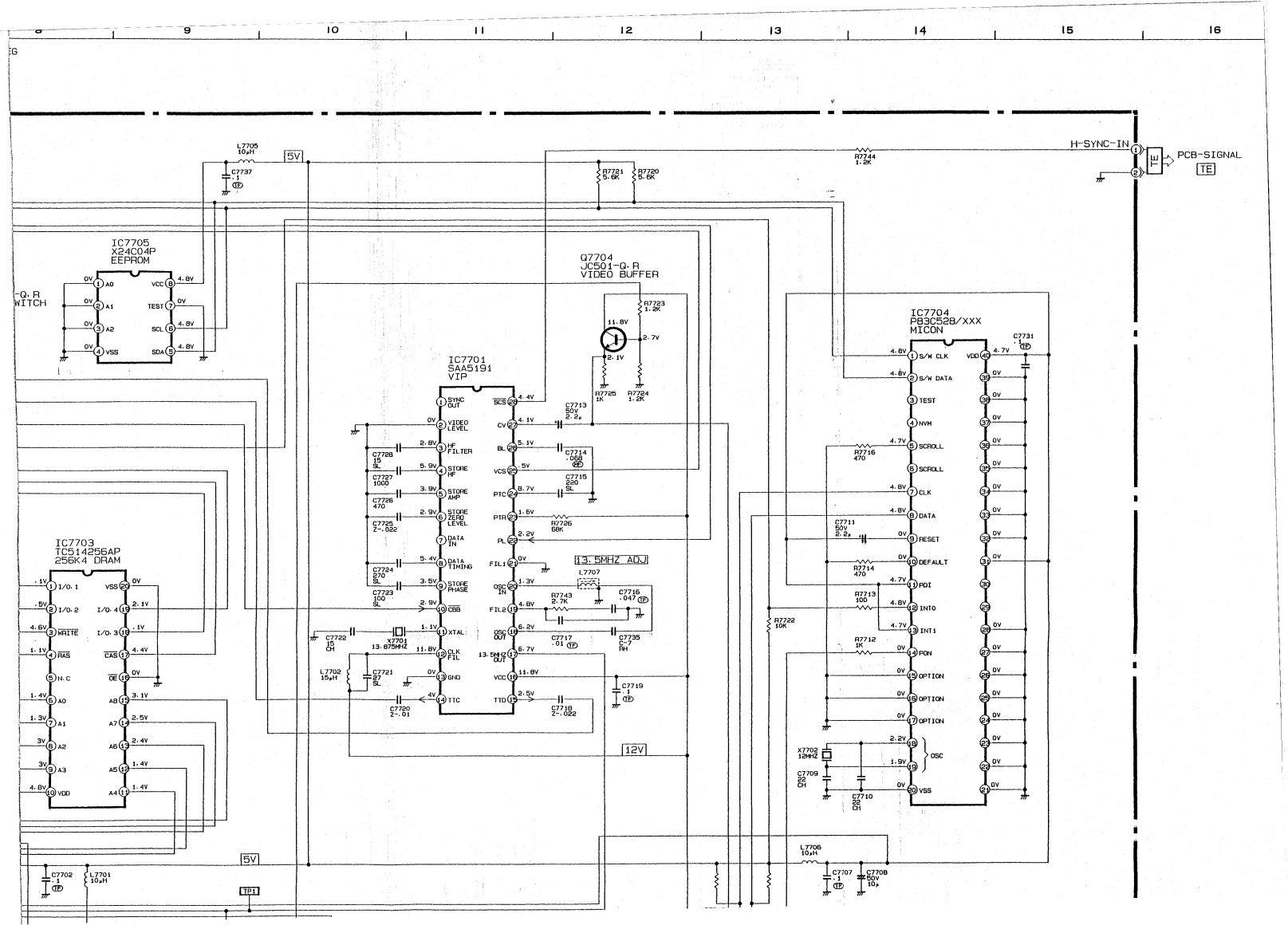
IC7705
X24C04P

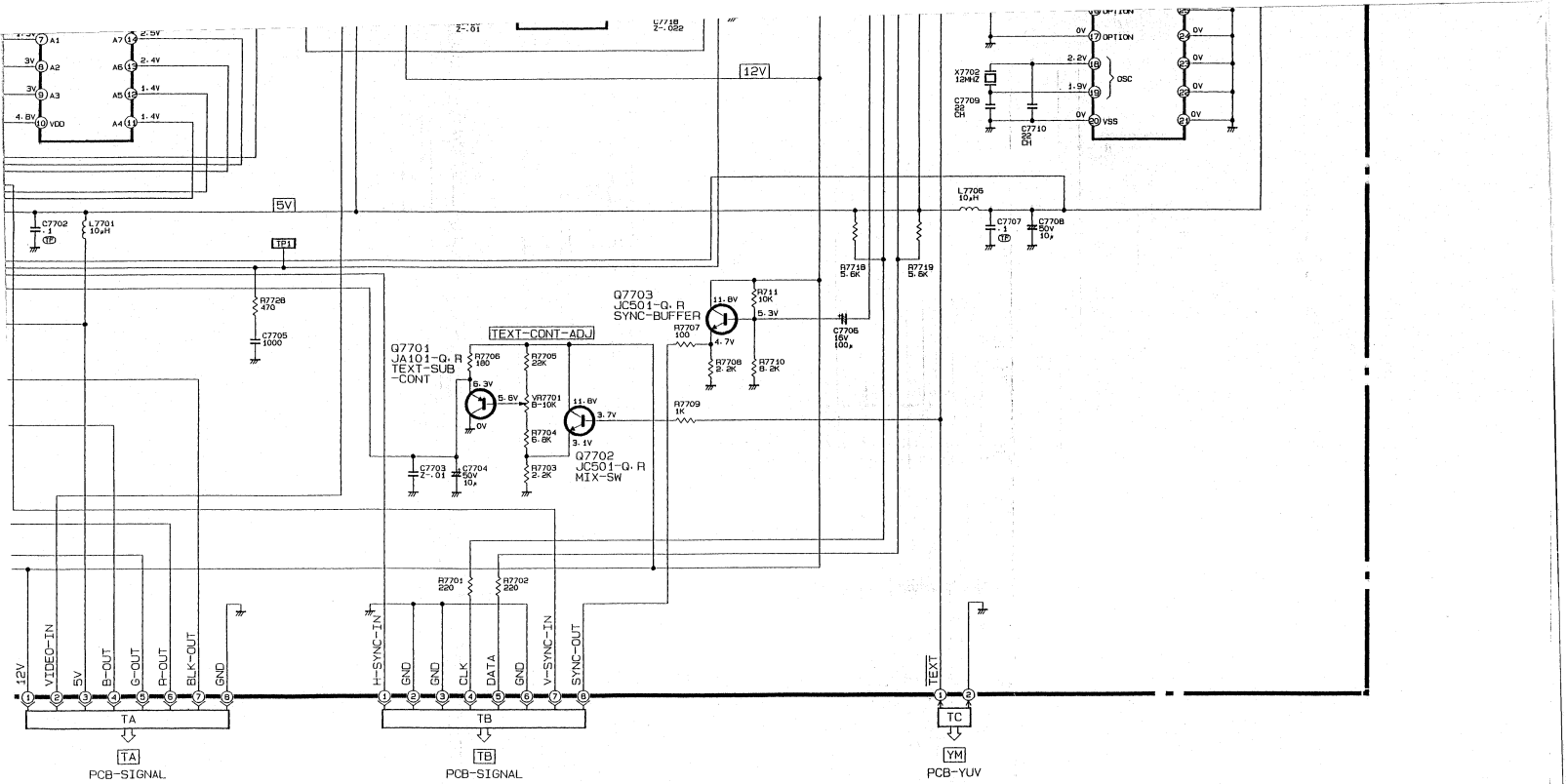





IC3006
TD6710AN
IC3003
TA8662N
QPSK SIGNAL AMP
IC3002
AN608P
QPSK SIGNAL AMP
IC3001
AN608P
LC3001
Q3001
JC501-Q, R
BUFFER
IC3003
TA8662N
QPSK DECODER
Q3002
2SC2274-F
10V-REG
D3001
6DA05-10C
IC3004
TC6011N
NICAM DECODER
IC3005
HM6264ALSP-10I2
S-RAM
PCB-TERMINAL
SN
VSS
RDATA
RCLK
MCLK
TEST1
TEST2
RESET
SFTCLK
LRCLK
DADATA
MUTEO
MUTEI
DDATA
DGATE
CDATA
CGATE
SEL1
SEL2
PERR
SERR
VCC
VDD
STEREO
MONO1
MONO2
WEN
I/O1
I/O2
I/O3
GND


IC3007 AFL87F14000A11 L.P.F-L
IC3008 AFL87F14000A11 L.P.F-R
IC3005
TD6710AN
DAC
Q3003
JC501-Q.R
L-MUTE
Q3006
JC501-Q.R
SW
Q3004
JC501-Q.R
R-MUTE
IC3014 M5201L AUDIO-SW-L
IC3015 M5201L AUDIO-SW-R
IC3005 HM6264ALSP
Memory Matrix 256X256
ROW Decoder
Column I/O
Column Decoder
INPUT Data Control
Timing Pulse Con
Read Write CONTROL
SEL2
+5V
SEL1
L-IN
GND
AU2
PCB-TERMINAL


IC7705
X24C04P
EEPROM
IC7701
SAA5191
VIP
Q7704
JC501-Q.R
VIDEO BUFFER
IC7704
P83C528/XXX
MICON
IC7703
TC514256AP
256K4 DRAM
13.5MHZ ADJ
5V
12V
TP1
H-SYNC-IN
PCB-SIGNAL
TE
-Q.R
WITCH



CT-37C2EDT(4/5)